(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 October 2003 (16.10.2003)

PCT

(10) International Publication Number
WO 03/085490 A2

(51) International Patent Classification[7]: G06F

(21) International Application Number: PCT/US03/07454

(22) International Filing Date: 12 March 2003 (12.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/109,042 29 March 2002 (29.03.2002) US

(71) Applicant: **MEDCO HEALTH SOLUTIONS, INC.** [US/US]; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US).

(72) Inventors: **MILLER, Ian, Michael**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US). **HALLORAN, Mark, J.**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US). **PETERSEN, Lynn, A.**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US). **WHITEFORD, Donna, T.**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US). **LO, Dorian, King-Cheung**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US). **BAVARO, Patrice**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US). **SCHUETH, Anthony, J.**; 100 Parsons Pond Drive, Mailstop F3-19, Franklin Lakes, NJ 07417 (US).

(74) Agents: **DONNER, Irah, H.** et al.; The Willard Office Building, 1455 Pennsylvania Avenue, N.W., Washington, DC 20004 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 03/085490 A2

(54) Title: PATIENT ORIENTED POINT OF CARE SYSTEM AND METHOD IMPLEMENTING SAME

(57) Abstract: Computer-assisted methods, systems and mediums for providing, to a physician, information relating to a patient. One embodiment of the present invention is a method that comprises the steps of collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history, storing the prescription history and prescription purchase history of the patient into a database, and accessing, by the patient, the database for the stored prescription history and prescription purchase history of the patient. The prescription purchase history includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions. The method also includes the steps of retrieving the prescription history and prescription purchase history by the patient, and communicating, by the patient, the retrieved prescription history and prescription purchase history to the physician via physically or electronically in order to assist the physician in providing medical services to the patient.

Patient Oriented Point of Care System and Method Implementing Same

Field of the Invention

The present invention generally relates to methods, systems and medium wherein a patient may provide, to a physician, patient specific information relating to a patient to assist the physician in providing medical/health care to the patient.

Background of the Invention

Health care costs represent a significant portion of the economic activity of the United States and continue to rise at a faster rate than the inflation rate of the overall economy. A contributing factor of the ever increasing health care costs is pharmacy care costs, which are increasing even faster than the health care costs. In order to reduce the costs of care, physicians have been under increasing pressure to be more efficient in patient care. In the area of the pharmacy care, this means physicians are required to understand and analyze a patient's pharmacy care history completely and efficiently.

There have been a number of proposed approaches in presenting patient pharmacy care history to information physicians. One such conventional system using a computerized system, a prescription creation screen 39, is illustrated in FIG. 1 and described in U.S. Patent No. 5,845,255 to Mayaud incorporated herein by reference. The creation screen 39 includes an array of buttons that can be activated by a user (e.g., a physician). In discussing various buttons of the prescription creating screen 39, near the top of screen 39 is a patient features bar 40 below which a prescription features bar 42 coordinates features necessary to review current therapy and order changes in treatment, or to order new treatment, for a selected patient. A prescription history zone 43 extends across the middle of the screen, the lower screen portion contains a prescribing zone 44, and a screen title 45 appears at the top of the screen.

Patient features bar 40 comprises a Select Patient button 46, a selected patient indicator 48, in this case Mary Harrington, a patient Problems button 50 and a patient Allergies button 52. Beneath Problems button 50 are displayed Mary Harrington's currently active problems 51 or conditions, shown here as pharyngitis and bronchitis. Beneath Allergies button 52 are displayed Mary Harrington's known allergies. Pressing or otherwise activating Problems button 50 or Allergies button 52 access a remote database for the patient's history and, opens a window or screen listing problems or allergies from which a physician, or other professional users, can select new problems or allergies to add to Mary Harrington's record, or delete ones that are no longer active. Optionally, system-provided problem or allergy libraries may be organized into multiple lists with button 50 or 52, respectively, opening a list selection box as a preliminary to displaying a selected problem or allergy list.

Prescription features bar 42 comprises an Rx History button 54, an Rx Options button 56, an Updating indicator 58, an Rx Info button 60 and a Renew Rx button 62.

Prescription history zone 43 displays those historical prescription details that may be relevant to a current prescription and has a Condition field 64, a Drug field 66, a Size field 68 a Dosing field 70, a

generic flag 72, an Expires field 74 and a Mine field 76, in which the various characteristics of patient Mary Harrington's previous prescriptions are listed.

Prescribing zone 44 comprises three active buttons, New Rx button 78, Send Rx button 80 and Close button 82, below which extends a prescribing header bar 84 which contains field identifiers for data entry of a full complement of prescription details. Available prescription detail fields comprise a Condition field 86, a Drug field 88, a Generic field 90, a Form field 92, a Size field 94, a Route field 96, an Amt (Amount) field 98, a Refill field 100, a Dosing field 102 and an Expires field 104.

Multiple lines of the selected patient's prescription history are listed in patient history zone 43 in the middle of the screen for review by the physician-user, and possible renewal, with scrolling or paging of extensive histories. Depending upon the patient's previous whereabouts and service providers, individual lines may come from multiple remote sources.

Prescribing zone 44, lowers down prescription creation screen 39, allows a physician user to select and prescribe drugs and dosages, for the selected patient, in this case Mary Harrington, and to transmit the created prescription by activating the Send Rx button 80, externally across a data network to other interested and authorized parties for prescription fulfillment block 55, patient record updating arrow 57 and the like. Send Rx button 80 can also output the prescription to print or storage.

Select Patient button 46 brings up a patient selection screen for selecting a different patient from one or more lists. Select Patient button 46 draws up a "Today's Patients" list or whichever patient list the user last selected from, or a default, user-selected patient list, and provides the options of selecting a new patient from alternative patient lists.

Problems button 50 brings up a patient problem history information screen in which a historical record of the patient's individual symptoms and diagnoses is listed and to which new problem reports can be posted. To maintain data integrity, and as a legal safeguard, historical information is not editable but may be supplemented, for example by reporting the subsequent status of a problem as (still) active or inactive. Any such additions to the record are stamped with the identity of the reporting physician, providing valuable elements of a treatment decision-making audit trail.

The patient's drug-related allergies, or drug reactions, are brought up in possibly editable form (screen not shown) by activating an Allergies button 52 and may be automatically updated, if desired by adding newly reported drug reactions and allergies, arrow 51. Desired personal or drug records relevant to possible allergies of this patient may be summoned from a host computer facility, which may in turn call on a remote database data-retrieval network block for records or record elements.

Rx History button 54, scrolls, drops down, or otherwise accesses any additional patient history lines beyond what will fit in prescription history zone 43 and may introduce vertical or horizontal scroll bars, or both, into zone 43, enabling the user to display any desired section of a patient's prescription history in zone 43 with the top line of the history highlighted. Any desired prior prescription line displayed in zone 43, can be highlighted by clicking or pressing on it.

A highlighted prior prescription can be automatically renewed by clicking or pushing a Renew Rx button 62. Typically, prescription creation screen 39 opens with the most recent prescription highlighted for possible renewal. Activating Renew Rx button 62 posts a highlighted prior prescription into prescribing zone 44 for automatic renewal, after editing, if desired. Renewal of any prior prescription can thus be effected in as few as two user steps by pressing Renew Rx 62 to post a highlighted previous prescription to prescribing zone 44 and completing a prescription in a single step from there. If desired option buttons such as Renew and Send Last Prescription or Renew All Active Prescriptions can be added. Pressing header buttons Condition 64, Drug 66, or Expires 74 causes the drug history display to be sorted by the selected header enabling the prescription history to be evaluated according to a particular parameter.

Because prescription creation screen 39 is complex and elaborate, a physician must invest time to learn and use it. Should there be more than one type of screen (e.g., each insurance carrier may have its own screen), the physician has to invest more time to learn them all. Due to these and other shortcomings, instead of assisting physicians in streamlining their practices, the conventional computerized systems may actually cause the physicians to be inefficient. FIG. 2 is an illustration of a conventional computerized system requires a physician to purchase/license not only software packages to run the screen(s) but other communication equipment as well.

In particular, the lefthand side of FIG. 2 shows an arrangement of services and devices that provide a downstream flow of data and communication resources to users of the conventional system. The righthand side shows sources from which desired data and data elements may be drawn and pathways for those data to reach the user. The flow is marshalled by a centrally depicted host computer.

Shown schematically in FIG. 2, are a number of user interface devices 200 and a desktop computer 201 communicating via any of a variety of communication services 202, through a gateway-router 204 with a host computer facility 206. FIG. 2 depicts schematically how a group or pool of users working with interface devices 200 or computers 201 running the screen 39, can be serviced by host computer facility 206.

Interface devices 200 are depicted as small form factor, handheld devices, or PDA's, communicating wirelessly over a WAN, a proprietary wireless service, or a cellular digital packet data service, or the like. Desktop computer 201, which may be a portable, notebook or other higher form factor computer, connected to communications gateway-router 204 via a local area network labeled LAN.

As shown above, the conventional computerized system requires physicians to purchase computer(s) and communication equipment, which may be different for each insurance carrier, in order to communicate with host computer facility 206, which may also be different for each insurance carrier. This requirement, rather than assisting physicians in understanding and analyzing patients' pharmacy

care history, may actually hinder such activity and impose additional capital expenditures on physicians.

Summary of the Invention

Computer-assisted methods, systems and mediums of the present invention overcome, among others, the shortcomings of the above-described conventional systems and efficiently provide, to physicians, information relating to patients. One of the methods comprises the steps of collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more purchases made by the patient in accordance with the one or more prescriptions. The method also includes the steps of storing the prescription history and prescription purchase history of the patient into a database and accessing, by the patient, the database for the stored prescription history and prescription purchase history of the patient. The method also includes the steps of retrieving the prescription history and prescription purchase history and communicating, by the patient, the retrieved prescription history and prescription purchase history to the physician in order to assist the physician in providing medical services to the patient.

In particular, the step of communicating by the patient may further optionally comprise the steps of printing information relating to the retrieved prescription history and prescription purchase history, and presenting, by the patient, the printed information to the physician. The printing step may further comprise the steps of combining the information relating to the retrieved prescription history and prescription purchase history and formatting the combined information into a form presentable the physician. The communicating step by the patient may also comprise the step of sending, by the patient, to the physician an electronic message that contains the retrieved prescription history and prescription purchase history. The electronic message can be a PDA message.

In other aspects of the invention, the method may also include the step of collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different physicians, or when drugs prescribed in the prescriptions are purchased from different pharmacists. The different pharmacists include at least one pharmacy that delivers purchased drugs via standard delivery mechanisms or other means, such as mail or retail.

The method may also include the step of storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient. In such an embodiment, the method may further include the steps of accessing, by the patient, the database for the stored information relating to pharmacy benefits for the patient and the preferred drug formulary, and retrieving the information relating to pharmacy benefits for the patient and the preferred drug formulary. The embodiment may also include the steps of printing the information relating to pharmacy benefits for the patient and the preferred drug formulary, printing information relating to the retrieved prescription history and prescription purchase history, and

presenting, by the patient, the printed information to the physician. The printing step may comprise the steps of combining the information relating to pharmacy benefits for the patient and the preferred drug formulary with information relating to the retrieved prescription history and prescription purchase history, and formatting the combined information into a form presentable the physician.

In another method of providing, to a physician, information relating to a patient, the method may comprise the steps of collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more purchases (including prescription and/or non-prescription related products) made by the patient in accordance with the one or more prescriptions, over-the-counter medications including herbal and/or natropathic medications, storing the prescription history and prescription purchase history of the patient into a database, and storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient. The method may also include the steps of accessing, by the patient, the database for the stored information, retrieving the accessed information, and communicating, by the patient, the retrieved information to the physician in order to assist the physician in providing medical services to the patient.

More specifically, the step of communicating by the patient may further comprise the steps of printing the retrieved information and presenting, by the patient, the printed information to the physician. The printing step may comprise the steps of combining the retrieved information, and formatting the combined information into a form presentable the physician. The step of communicating by the patient may comprise the step of sending, by the patient, to the physician an electronic message that contains the retrieved information. The electronic message can be a PDA message.

The method may further comprise the step of collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different physicians or when drugs prescribed in the one or more prescriptions are purchased from different pharmacists. The different pharmacists include at least one pharmacy that delivers the prescriptions via, for example, mail or other means.

A computer assisted system, for providing to a physician information relating to a patient, includes means for collecting a prescription history and a prescription purchase history. The prescription history includes information relating to one or more prescriptions issued to the patient. The prescription purchase history includes information relating to one or more purchases made by the patient in accordance with the one or more prescriptions. The system may also include a means for storing the prescription history and prescription purchase history of the patient into a database and means for accessing, by the patient, the database for the stored prescription history and prescription purchase history of the patient. The system may further include means for retrieving the prescription history and prescription purchase history, and means for communicating, by the patient, the retrieved

prescription history and prescription purchase history to the physician in order to assist the physician in providing medical services to the patient.

In particular, the means for communicating by the patient may also comprise means for printing information relating to the retrieved prescription history and prescription purchase history, to thereby allow the patient to present the printed information to the physician. The printing means may further include means for combining the information relating to the retrieved prescription history and prescription purchase history, and means for formatting the combined information into a form presentable the physician. The means for communicating by the patient may also include means for sending, by the patient, to the physician an electronic message that contains the retrieved prescription history and prescription purchase history. The electronic message can be, for example, a standard Personal Digital Assistant (PDA) message, PC message, pager message, fax message or other message delivered to a platform that is capable of receiving an electronic message.

The system may further comprise means for collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different physicians or means for collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from different pharmacists. The different pharmacists include at least one pharmacy that delivers purchased drugs via mail. The system also includes means for storing to the database information relating to pharmacy benefits (e.g., medical insurance coverage) for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient. In this embodiment as well as other embodiments, the system may also include means for accessing, by the patient, the database for the stored information relating to pharmacy benefits for the patient and the preferred drug formulary, and means for retrieving the information relating to pharmacy benefits for the patient and the preferred drug formulary. This system may also include a means for printing the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history, to thereby allow the patient to present the printed information to the physician. The printing means may comprise means for combining the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history, and means for formatting the combined information into a form presentable to the physician.

In another embodiment of the system of providing, to a physician, information relating to a patient of the present invention, the system comprises means for collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more purchases (including prescription and/or non-prescription related products) made by the patient in accordance with the one or more prescriptions, means for storing the prescription history and prescription purchase history of the patient into a database, and means for storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the

patient. The system may also include means for accessing, by the patient, the database for the stored information, means for retrieving the accessed information, and means for communicating, by the patient, the retrieved information to the physician in order to assist the physician in providing medical services to the patient.

In particular, the means for communicating by the patient may also comprise means for printing, by the patient, the retrieved information, to thereby allow the patient to present the printed information to the physician. The printing means may further comprise means for combining the retrieved information, and means for formatting the combined information into a form presentable the physician. The means for communicating by the patient may also comprise means for sending, by the patient, to the physician an electronic message that contains the retrieved information. The electronic message can be a PDA message.

In another aspect of the present invention, the system may further include means for collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different physicians or means for collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from different pharmacists. The different pharmacists include at least one pharmacy that delivers purchased drugs via mail.

The preset invention also includes a computer readable medium having instructions being executed by one or more computers, the instructions directing the one or more computers for providing to a physician information relating to a patient. The instructions comprising implementation of the steps of collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more purchases made by the patient in accordance with the one or more prescriptions, storing the prescription history and prescription purchase history of the patient into a database, and accessing the database for the stored prescription history and prescription purchase history of the patient. The instructions may also include the steps of retrieving the prescription history and prescription purchase history, and communicating the retrieved prescription history and prescription purchase history to the physician in order to assist the physician in providing medical services to the patient. The accessing step and the communicating step are advantageously initiated by the patient.

More specifically, the step of communicating by the patient may also comprise the step of printing information relating to the retrieved prescription history and prescription purchase history, to thereby allow the patient to present the printed information to the physician. The printing step may also comprise the steps of combining the information relating to the retrieved prescription history and prescription purchase history, and formatting the combined information into a form presentable to the physician. The step of communicating by the patient may also comprise sending to the physician an electronic message that contains the retrieved prescription history and prescription purchase history. The electronic message can be a PDA message. In another aspect of the present invention, the medium

may further include instructions relating to the step of collecting the prescription history and prescription purchase history when one or more prescriptions are issued by different physicians, or collecting the prescription history and prescription purchase history when drugs prescribed in one or more prescriptions are purchased from different pharmacists. The different pharmacists include at least one pharmacy that delivers purchased drugs via mail.

The medium may also include instructions relating to the steps of storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient. In such an embodiment, the medium may also include instructions relating to the step of accessing the database for the stored information relating to pharmacy benefits for the patient and the preferred drug formulary; and retrieving the information relating to pharmacy benefits for the patient and the preferred drug formulary, wherein the accessing step is initiated by the patient. The medium may also include instructions relating to the steps of printing the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history, to thereby allow the patient to present the printed information to the physician. The printing step may further comprise the steps of combining the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history, and formatting the combined information into a form presentable to the physician.

Another embodiment of the present invention includes a computer readable medium having including instructions being executed by one or more computers. The instructions direct the one or more computers for providing, to a physician, information relating to a patient. The instructions comprise implementation of the steps of collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more purchases made by the patient in accordance with the one or more prescriptions, storing the prescription history and prescription purchase history of the patient into a database, and storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient. The medium may also include instructions relating to the steps of accessing the database for the stored information, retrieving the accessed information, and communicating the retrieved information to the physician in order to assist the physician in providing medical services to the patient, wherein the assessing step and the communicating step are initiated by the patient.

More specifically, the step of communicating by the patient may also comprise the steps of printing, by the patient, the retrieved information, to thereby allow the patient to present the printed information to the physician. The printing step comprises the steps of combining the retrieved information, and formatting the combined information into a form presentable the physician. The step of communicating by the patient may comprise sending, by the patient, to the physician an electronic

message that contains the retrieved information. Alternately, the patient may download this report to the physicians' computer and/or mobile device or to their own device (e.g., PDA, disk, key card, storage media, etc.) In another embodiment of the present invention, the medium may also include instructions relating to the steps of collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different physicians or collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from different pharmacists. The different pharmacists include at least one pharmacy that delivers purchased drugs via mail.

There has thus been outlined, rather broadly, the features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the invention.

Other features of the present invention will be evident to those of ordinary skill, particularly upon consideration of the following detailed description of the preferred embodiments.

NOTATIONS AND NOMENCLATURE

The detailed descriptions which follow may be presented in terms of program procedures executed on computing or processing systems such as, for example, a stand-alone computing machine, a computer or network of computers. These procedural descriptions and representations are the means

used by those skilled in the art to most effectively convey the substance of their work to others skilled in the art.

A procedure is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result. These steps are those that may require physical manipulations of physical quantities (e.g., storing prescription history information into a database). Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared and otherwise manipulated. It proves convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers, or the like. It should be noted, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities.

Further, the manipulations performed are often referred to in terms, such as adding or comparing, which are commonly associated with mental operations performed by a human operator. No such capability of a human operator is necessary, or desirable in most cases, in any of the operations described herein which form part of the present invention; the operations are machine operations. Useful machines for performing the operation of the present invention include general purpose digital computers or similar devices.

Brief Description of the Drawings

The detailed description of the present application showing various distinctive features may be best understood when the detailed description is read in reference to the appended drawing in which:

FIG. 1 is a drawing illustrating a conventional, prior art prescription creation screen;

FIG. 2 is a schematic drawing illustrating a downstream flow of data and communication resources of the conventional, prior art prescription creation system;

FIG. 3 is a flowchart illustrating a set of Web pages for example embodiments of the present invention;

FIG. 4 is a diagram illustrating an example Web page of a "My" page presented in FIG. 3;

FIG. 5 is a diagram illustrating an example Web page of a "Prescription" page of FIG. 3;

FIG. 6 is a diagram illustrating an example Web page of a "My Health" page of FIG 3;

FIG. 7 is a diagram illustrating an example Web page of a "My Benefits" page of FIG 3;

FIG. 8 is a diagram illustrating an example Web page of a "My Store" page of FIG 3;

FIG. 9 is a diagram illustrating an example Web page of a "My Doctor Visit" page of FIG 3;

FIG. 10 is a diagram illustrating an example Web page of a "Medication History" page of FIG 3;

FIG. 11 is a drawing illustrating an example Web page of a "Patient Request" page of FIG 3;

FIG. 12 is a drawing illustrating an example Web page of a "Benefit Information" page of FIG 3;

FIG. 13 is a drawing illustrating an example Web page of a "Drug Formulary" page of FIG 3;

FIG. 14 is a drawing illustrating an example Doctor Kit print;

FIG. 15 is a drawing illustrating an example Web page of a "Prescription Fax" page;

FIG. 16 is a flow chart illustrating various components in example embodiments of the present invention;

FIG. 17 is a flow chart illustrating the steps relating to the components shown in FIG. 16;

FIG. 18 is a flow chart illustrating the steps in accessing an example database by a patient;

FIG. 19 is a block diagram representation of an example embodiment of computer network(s) implementing embodiments of the present invention;

FIG. 20 illustrates a computer that can be used in implementing embodiments of the present invention;

FIG. 21 is a block diagram of internal hardware of the example computer shown in FIG. 20; and

FIG. 22 illustrates one example of a memory medium which may be used for storing computer programs of embodiments of the present invention.

Detailed Description of the Invention

Reference now will be made in detail to the presently preferred embodiments of the invention. Such embodiments are provided by way of explanation of the invention, which is not intended to be limited thereto. In fact, those of ordinary skill in the art may appreciate upon reading the present specification and viewing the present drawings that various modifications and variations can be made.

For example, features illustrated or described as part of one embodiment can be used on other embodiments to yield a still further embodiment. Additionally, certain features may be interchanged with similar devices or features not mentioned yet which perform the same or similar functions. It is therefore intended that such modifications and variations are included within the totality of the present invention.

Various embodiments of the present invention bring together patient specific, patient consented, up-to-date and timely information (e.g., real-time) in a convenient low-cost methodology to be easily accessible by physicians. In particular, some embodiments of the present invention are configured to allow a patient, who is scheduled to visit a physician, to retrieve his/her patient specific information from a database and print, or forward electronically, the retrieved information to the physician. It should be noted that, although embodiments of the present invention are described as providing information to physicians, providing information to other health care providers (e.g., an osteopath or pharmacist) is also contemplated within embodiments of the present invention.

The patient specific information includes one or any combination of the following sets of information: 1. past prescriptions issued to the patient by either the treating physician or other physicians; 2. whether or not the prescribed drugs have been purchased by the patient; 3. when the prescribed drugs were purchased; 4. The quantity of prescribed drugs purchased; 5. The number of days past from a refill date when a prescription has not been refilled; 6. insurance benefit information of

the patient; 7. covered drug formulary, etc. The present invention provides an efficient way to present the patient specific information to the physician because it gives the full description of the patient's (e.g., prescription) history, including an indication of compliance by the patient. The physician can also consider the insurance benefit information which helps the patient to reduce drug expenditure. Unlike conventional systems, the physician is not required to obtain consent from the patient to receive the patient specific information, because the information presented to the physician is considered to be released by the patient with consent. It also saves the physician, patient, and pharmacy time as they do not have to revisit formulary or after prescriptions have been written by the physician, because the formulary information, and benefit issues is presented to the physician at the time or point of care.

The patient can access the patient specific information by visiting a Web site, via the Internet, that includes a number of Web pages, examples of which are illustrated in FIGs. 4-13. (The patient can also visit the Web site for refill, renewal or consent.) A summary of these example Web pages is graphically illustrated in FIG. 3. As shown in Fig. 3, the Web site includes the following example Web pages: a "Home" page **301**, a "Login" page **303**, a "My" page **304**, a "My Prescriptions" page **305**, a "My Health" page **306**, a "My Benefits" page **307**, a "My Store" page **308**. Each of these Web pages provides an option (e.g., a button) that allows the patient to access a "My Doctor Visit" page **309**. In turn, from the "My Doctor Visit" page **309**, the patient can access any of the following Web pages: a "Medication History" page **310**, a "Patient Specific Messages" page **311**, a "Benefit" page **312**, a "View Drug List (Formulary)" page **313**, and a "Prescription Fax Form" page **314**. A "Print Full Doctor Visit" option **315** is also provided to allow the patient to print the patient specific information. The Web pages can be written using, for example, HTML (Hypertext Markup Language), XML (eXtendable Markup Language) or the like. Each of the above-mentioned Web pages are described in detail below.

The "Home" page **301** is a Web page that displays general introductory information for the patient regarding the Web site. The "Home" page is configured such that the patient can access the rest of the Web pages of the Web site after a login process using the "Login" page **303**. If the patient has not registered and cannot login, then the "Home" page is also configured to allow the patient to register and then login into the Web site.

Upon entering the Web site, the patient is presented with an introductory section explaining the benefits of a doctor kit (described below) as well as any other informational messages that is desired to be passed to the patient. A registered member is given a list of patients (e.g., other members of the patient's family) whose information can be viewed by other members of the same registered family. The caption for this list is "To begin, select a patient name:". If the current patient does not have access to view other patients, then just their names are available to choose from. In order for the patient to access full family view, they and their spouse/domestic partner need to grant family view. A member with this access set to "True" can view the doctor kit on a dependent under 18 or spouse. A spouse with this flag set can also view dependents under 18 and the member. The Web site can optionally be

configured such that dependents under the age of 18 are unable to view this information on their parents or siblings.

After the patient selects a member from the list, the "My" page **304** appears. An example of the "My" page (for "John") is illustrated in FIG. 4. This page can optionally display a number of panes for displaying different types of information. In the example "My" page **304** shown in FIG. 4, three panes are illustrated: 1. Prescription Status pane **405**; 2. Managing Health pane **407**; and 3. Site Information pane **409**. In the Prescription Status pane **405**, information relating to refillable prescriptions (either for the patient only or for his/her family members) is displayed. In the Managing Health pane **407**, information relating to the latest health research, news, etc. is displayed. In the Site Information pane **409**, information relating to the Pharmacy Web site (e.g., new features) is displayed.

FIG. 5 illustrates an example of a "My Prescription" page **305**, which displays prescription history of the patient and his/her family members who have been registered as belonging to one family. In this example page, prescriptions that have been issued to the patient and his/her family can be displayed one of three ways by selecting one of three buttons: 1. Prescriptions filled by mail prescription fillers **503**; 2. Prescriptions filled at retail pharmacy stores **505**; and 3. All prescriptions **507**. The example list shows when the option for displaying Prescriptions filled by mail prescription fillers **503** is selected.

The example includes information relating to prescription number, prescribed drug name, prescribee's name, date received, date shipped and refills remaining. Each entry also includes the status thereof. In the example first entry of the list, the prescription number is 123456789012, the prescribed drug name is Metoprolol Tartrate Tabs, 50mg tabs, the name of the patient is Gina, date received is Oct. 2, 2000, date shipped is October 6, 2000 and refills remaining is 3.

FIG. 6 illustrates an example "My Health" page **306** which displays a number of panes that contain general health related information. This page displays four example topic panes: "Health Centers" **605**, "Health Topics" **607**, "Tools," **609** and "Resources" **611**. In the "Health Centers" pane **605**, one from many health centers can be selected (e.g., An Arthritis Center for information relating to arthritis, a Cardiovascular Center for information relating to blood circulation, etc.). The selected "Center" is displayed in "My Centers" field **612** which can be changed using an "edit" button **614**.

FIG. 7 illustrates an example "My Benefits" page **307** which includes a number of buttons that bring up, when selected, information relating thereto as follows:

A "Pharmacy Benefits" section **703** includes buttons for reviewing the patient's prescription benefits, locating a retail pharmacy, requesting envelopes and forms (for returning Rx or refill forms), printing a mail service form, and contacting the Pharmacist.

A "Prescriptions" section **709** includes buttons for refilling or renewing a prescription, checking the patient's prescription history, requesting a new prescription, reviewing the patient's prescription expense summary and receiving information for an upcoming visit.

An "Orders" section **705** includes buttons for reviewing the Patient's account summary and checking the status of the patient's orders.

A "Mail/Internet Pharmacy" section **707** includes buttons for viewing saving opportunities in purchasing prescribed drugs, starting with mail service (e.g., registrations).

A "Drug Information" section **711** includes buttons for finding information on a particular drug, displaying price of a medication, or asking questions to a pharmacist via e-mail.

A "My Store" section **713** includes a button for purchasing over-the-counter pharmaceutical and other products.

When the "My Store" button is selected, a "My Store" Web page is displayed. An example of the "My Store" Web page **308** is shown in FIG. 8. As shown in FIG. 8, the patient is allowed make purchases of various products – both pharmaceutical and non-pharmaceutical products.

From any of the above-described Web pages (except the "Home" and "Login" pages), the "My Doctor Visit" page, an example of which is illustrated in FIG. 9, can be accessed. The "My Doctor Visit" page is accessed by the patient when he/she is about to visit his/her physician. The following set of Web pages allows the patient to print patient-specific information so that the patient's physician can issue a new prescription based on, in part, the presented information.

As noted above, the patient can access information relating to his/her family members. Information relating to any member of the patient's family can be accessed by selecting a name from a name selection bar **903**. The selected member information, then can be accessed by selecting one of a number of options in "What's Included" pane **905**, which includes the following options: "Medication history," "Patient requests," "Benefit information," "Formulary quick guide," "Prescription fax e-mail form." These options, when selected, display a "Medication History" page **310**, a "Patient Selected Message" page **311**, a "Benefits" page **312**, a "Formulary" page **313**, and a "Prescription Fax Form" page **314**, respectively.

The "Medication history" option illustrated in FIG. 9, when selected, causes a "Medication history" Web page to be displayed. An example of such a page is illustrated in FIG. 10. The main function of the page is to show the medication history of the members of the patient. The medication history includes information relating to a prescription number, medication name, strength of prescribed drugs, the method with which the prescription was filled (e.g., mail, local drug stores, etc.) the date on which the prescription was filled, the number of days the purchased drugs may cover, and the number of days past a refill date.

In the example first entry **1003** of the list, its prescription number is 123456789012, the medication name is Cholestyramine, 250 mg tabs, the prescription was filled at a retail pharmacy store, the prescription was filled on November 31, 2000, the supply would last 60 days, and the number of days past a refill date is 30 days.

The duration of time to store the medication history is, for example, 12 months for both mail and retail options, after which information maybe expunged.

The Days Late for Refill (Days past refill date) calculation is expressed as, for example:

Current/Most Recent Date of Service	-	Date of Service from previous fill	-	Days of supply previous fill	=	Days late for refil
7/17/98	-	4/15/98	-	90	=	3

The calculation determines the number of days resulting from the last refill date subtracted from the last date of service. If this number is greater than the number of days of supply of the last refill, then the difference indicates how many days past due that the medication may not be available to the patient. If the numbers are equal, the patient is due to refill today and a "0" is displayed. If the result of the calculation is less than the number of days of supply, then the display would show "N/A" as the patient is not late in refilling their prescription. If no prior fill is available, an "N/A" is displayed. In the event there is no history to report on the patient selected, alternate text (e.g., "No History To Be Reported") will be displayed instead of a blank table. However, in the event that a data element is missing, a blank cell will be displayed.

In some example embodiments, the login process, discussed in connection with "Login" page **303** of FIG. 3, can be achieved by the patient entering his/her name and a prescription number, an example of which is illustrated in FIG. 10.

The "Patient Requests" option illustrated in FIG. 9, when selected, causes a "Patient Specific Message" page to be displayed, an example of which is illustrated in FIG. 11. In the "Patient Requests" page, the patient is allowed to make selections regarding whether or not to renew the prescribed medication and whether or not to receive the medication via a mail prescription by a mail option.

The "Benefit information" option illustrated FIG. 9, when selected, causes a "Benefits" page to be displayed. The "Benefits" page, an example of which is illustrated in FIG. 12, displays copayment information. More specifically, FIG. 12 displays copay information when generic/brand name medication is to be purchased and when home delivery/retail pharmacy option is used.

The "Formulary" option illustrated FIG. 9, when selected, causes a "Formulary" page to be displayed. The medication "Formulary" page, an example of which is illustrated in FIG. 13, displays a number of commonly prescribed medications preferred by the medical/pharmaceutical care insurance carriers of the patient.

In particular, in some example embodiments of the present invention, as the patient enters the Web site, a formulary match process can optionally occur before the "Formulary" page is displayed to the member. The formulary match process includes the following steps: First, an indicator is checked to determine if the patient's health plan allows to display the formulary online. Second, a formulary ID of the patient is identified. The formulary ID is a number that is consistent across all claims submission types and match the appropriate formulary. The various Formulary pages, identifiable by the ID, can optionally be stored for each type of formulary with the expectation that updates can be provided on a regular basis, e.g., a quarterly basis. Next, the matched formulary is displayed. If no formulary matches, no formulary is displayed. In another example embodiment, a computer can be configured to

allow the formulary to be created when needed by referencing a rules database that contains all the rules required to create such formularies. Then the formulary is displayed to the patient.

This Web page results in an accurate, up to date formulary. This information can help the patient to make the most of his/her benefits, while giving the physician information to help to prepare a correct prescription. The formulary also reduces the chance of incorrectly issuing prescriptions. (For example, an incorrect prescription includes drugs not preferred by the insurance carriers.)

The present invention advantageously provides a doctor kit that comprises a set of printed or electronic material that contains the patient specific information, for example, any combination of the medication history, patient requests, benefit information, formulary, prescription fax form and information and the like. The doctor kit provides the patient with a tool that he/she can use to assist the physician in making critical therapy decisions. Benefit information and medication history stored within the doctor kit can reflect the same information already accessible on the site under the "Benefits" page, FIG. 12, and the "Medication History" page, FIG. 10, respectively. It allows the patient to be more proactive and informed when reviewing their medication therapy with his/her physician. It also allows the patient to seek self-help. The kit can optionally include a fax prescription form described below in connection with FIG. 15.

The following is an example print of the doctor kit:

A "Patient Name" field **1402** includes the patient's first and last name.

A "Form Content" filed **1403** includes the format in which the content will be generated dynamically and merged with the data elements.

An "As of" Date **1404** includes the current date (format mm/dd/yy) representing the date the form was printed.

A "Member Id" field **1405** includes the identification number of the member entered at the registration stage.

A "Date of Birth" field **1406** includes patient's date of birth (format mm/dd/yy).

A "Group #" field **1407** includes the group health insurance ID associated with the member and prescription entered at the time of registration.

A "Key Image" field **1408** illustrates symbols representing whether the prescription was filled at a retail pharmacy or by a mail pharmacy.

A "Prescription Number/Medication Name/Strength (Mail/Retail)" field **1409** includes the medication name and strength. There may be multiple occurrences of the same medication here since the form will display prescription activity from the last 12 months. This information will be displayed in medication name and date of order dispensed (e.g., the date of the order).

A "Rx filled at" field **1410** includes a symbol representing whether the prescription was filled at a retail pharmacy or by a mail pharmacy.

A "Date filled" field **1411** includes a value representing the date the prescription was dispensed.

A "Quantity" field **1412** includes a value representing the total number of pills.

A "Days Supply" field **1413** includes a value representing the total number of days.

A "Days past refill date" field **1414** includes a computed value determined by subtracting the days supply of the previous fill from the difference of the most recent date of service and the date of service from the previous fill. The date from the previous fill will be used if available.

A "Drug Name – New Prescription" field **1415** provides information on those prescriptions that are currently "in process/open" that the patient has requested to renew.

A "Drug Name – Home Delivery" field **1416** provides information on those prescriptions that are currently "in process / open" that the patient has requested to fill by mail.

A "Type of Service" field **1417** represents the type of coverage that is currently available to the patient.

A "Maximum Days Supply" field **1418** shows information based on client plan specifics / definitions, this value represents the total number of days allowed to be dispensed by either mail or retail.

A "Generic Co-payment" field **1419** represents the dollar amount to be paid by the member when a generic medication is dispensed by either mail or retail.

A "Brand Co-payment" field **1420** represents the dollar amount to be paid by the member when a brand name medication is dispensed by either mail or retail.

The patient can view these segments one at a time or choose to print the entire kit. If printing is selected, all sections are to be generated and formatted to print correctly for the patient. It should be noted that the patient can also be given an option to print any subset or combination of the above described segments. For instance, the patient can choose to: (a) print his/her prescription history, (b) the prescription history plus benefit/coverage, or (c) allergies but not the prescription history. It should also be noted that the patient can be given an option to self enter known allergies, medical conditions and/or currently taking drugs (including over-the-counter drugs).

Example browsers to run the Doctor Kit include Netscape™, America Online™ with Microsoft IE™, and WebTv™. Furthermore, in at least some example embodiments of the present invention, when the patient prints their doctor kit, all appropriate information of the kit can be printed in one step. In these example embodiments, the Web site may be configured to support 5.0 & higher or Netscape 4.75 and higher, etc.

In one example embodiment, when the patient decides to print the doctor kit, he/she would click on the "Print the Kit" button found in the upper right-hand corner in FIGs. 10-14. When the print button is selected, a hidden frame in the page is populated with the five segments, or any combination thereof, of the doctor kit. During the loading of the hidden frame, a message is to be presented to the patient informing them that Doctor Kit is formatting. Once the frame is populated, the printout is to be sent to a printer. The hidden frame is to be populated with the entire Doctor Kit. The inclusion of the prescription history, patient specific messages, benefit information, formulary, and prescription fax

form sections can be dependent on benefit type, eligibility status and formulary file match results. Alternately, the patient may download this report to the physicians' computer and/or mobile device or to their own device (e.g., PDA, disk, key card, storage media, etc.).

The above-described example Web pages advantageously deliver the patient-specific information at and around the time the physician issues a prescription, to thereby ensure that the correct prescription is written for the patient. The benefits of providing the patient information to the physician include: improved quality of patient care; improved formulary compliance; greater control over pharmacy costs; appropriate mail usage; reduced costs from prescribing errors, adverse drug reactions and poor patient compliance; and improved system for doctor-patient-pharmacy interactions.

The present invention also utilizes the "patient-influence" on the physician, since the physician is more likely to consider this information if it is provided directly by the patient. In addition, patient consent is required to release the information to the doctor, which is implicit when the patient provides the information directly to the doctor.

The Prescription Fax Form page, an example of which is illustrated in FIG. 15, is a printable page for faxing an issued prescription to a pharmacy (e.g., a mail order prescription service pharmacy.

Various example computer components and methodologies of exemplary embodiments of the present invention are described below by referencing FIGs. 16-18. In particular, FIG. 16 illustrates various components of some example embodiments of the present invention, which include a patient information database **1603** and optional third party communication equipment **1605**.

The patient information database **1603** is configured to store, sort, search and/or retrieve prescription information, and other information, examples of which have been described above in connection with FIGs. 4-13. Although the above-described examples in connections with FIGs. 4-13 show information relating to only one patient, the patient information database **1603** is configured to store, sort, search and/or retrieve prescription information, and other information, for many patients (e.g., up to or more than tens of millions of patients). In the patient information database, a database interface software package is configured to allow a patient to search/retrieve information only pertaining to him/her and his/her family members who have been registered as such. The database can be any commercially available (e.g., Sybase) or custom built systems.

The patient information database **1603** can be configured to store the prescription information, and other information, for an indefinite period of time. In an example alternative embodiment, the patient information database is optionally configured to store the prescription information, and other information, only for a predetermined length of time (e.g., 12 months).

The patient information database can receive and store prescription information of patients from any number of pharmacy stores **1607**. The pharmacy store can be a local drug store (e.g., CVS, Walgreen, etc.) or can be a mail order prescription, PBM fulfillment company (e.g., Merck-Medco Managed Care, LLC). Each time the patient contacts any of the pharmacy stores **1607** (e.g., to fill a prescription or for a refill), the pharmacy store forwards relevant information to the patient information

database **1603** to be stored (e.g., names and amount of drugs prescribed, names and amount of drugs purchased, etc.), via, for examples, a secured communication link over the Internet.

In some embodiments of the present invention, the patient is allowed to visit a pharmacy store that uses a second database different from the patient information database **1603**. In such embodiments, the patient is given an option to transfer the data stored in the secondary database to the patient information database **1603**. For example, in the My Prescriptions Web page, an option can be provided to transfer the data from the secondary database. (It should be noted that the present invention allows more than one secondary database.) When the patient selects the option to transfer the data from the secondary database, an interface is created between the secondary database and the patient information database **1603**. Example steps of the interface may include matching patient's name and/or an identification number, e.g., the insurance member number, and then formatting the data stored in the secondary database so that the formatted data can be transferred and stored into the patient information database **1603**. The interface can also be configured to transfer data between databases as known in the art. The interface may be created when the data transfer is performed or can be prearranged and created before the data transfer is performed.

In some example embodiments of the present invention, the patient is not limited to visiting only one physician. The patient can visit any number of physician **1609**, whether or not the physician's visit is covered by the patient's health care insurance carrier. The patient may visit any physician because information relating to any prescription written by any physician is stored in the patient information database **1605**. This allows the patient to print a complete prescription history, no matter how many different physicians have been visited by the patient. It should be noted that one physician cannot access prescription information relating to prescriptions written by other physicians without that patient's consent.

In particular, stored information in the patient information database is protected for privacy. More specifically, the database is configured such that no other person can access the stored information other than the patient or other family members, if they have been registered as such. In this way, no pharmacy or physician has access to the information stored in the patient information database without a proper authorization by the patient.

The patient may print the patient's specific information by using the Doctor Kit as discussed above. In an alternative embodiment, the patient may forward the patient specific information to the physician via the third party communication equipment **1605**. It should be noted that whether prescription information is forwarded to the physician electronically, by printing and presenting the printed material to the physician, or forwarded using the third party communication equipment, the process is advantageously initiated or directed by the patient. In other words, the patient, either implicitly or explicitly, authorizes release of the prescription data to the physician.

FIG. 17 illustrates example steps carried out by some example embodiments of the present invention. First, a patient visits a physician with or without the patient specific information (step **1701**).

The physician issues a prescription to treat any ailment the patient may possess (step **1703**). The patient purchases a drug(s) in accordance with the prescription at a pharmacy store, either a local pharmacy store or a mail delivery company (step **1705**). When the purchase is made, the pharmacy reports the purchase information to a computer that interfaces with the patient information database. The patient information database, more specifically, the interface computer, determines whether or not the patient is a new patient. If the patient is a new patient, the interface computer, creates a field in the patient information database to store information related to the patient (step **1709**). If the patient is not a new patient, then the previously created field is located. The information received from the pharmacy is then stored in the field.

Information relating to each purchase is stored in the database by being associated with a reference number (e.g., a prescription number) (step **1711**). The received information relating to prescribed drugs, purchased drugs, amount of purchased drugs, etc., is stored into the database using the patient field and the assigned prescription number (step **1713**). Later, when the patient intends to visit one of many physicians, the patient can access the database for the stored information before visiting the physician (step **1715**), as described above in connection with the example Web site illustrated in FIGs. 4-14. The accessed information is printed (or electronically communicated to the physician) by the patient (step **1717**). The patient then visits the physician, optionally repeating the steps (step **1719**).

FIG. 18 illustrates example steps in accessing the patient database by the patient. The patient first navigates to the Web site (step **1801**). If the patient is a new patient, then the patient is required to register for the Web site (steps **1803** and **1805**). If the patient is not a new patient, he/she may log in with a prescription number (step **1807**). As shown above in FIG. 4, general information is then provided (step **1809**). Subsequently, the patient selects an option to access the database for information relating to the patient (step **1811**). The patient then selects an option (either print and present or electronic communication) to communicate the accessed information to the physician (step **1813**).

FIG. 19 is an illustration of the architecture of the combined Internet, POTS (plain, old, telephone service), and ADSL (asymmetric, digital, subscriber line) for use in accordance with the principles of the present invention (e.g., accessing the Web site for various Web pages illustrated in FIGs. 4-13). Furthermore, it is to be understood that the use of the Internet, ADSL, and POTS are for exemplary reasons only and that any suitable communications network may be substituted without departing from the principles of the present invention. This particular example is briefly discussed below.

In FIG. 19, to preserve POTS and to prevent a fault in the ADSL equipment **1954**, **1956** from compromising analog voice traffic **1926**, **1996** the voice part of the spectrum (the lowest 4 kHz) is separated from the rest by a passive filter, called a POTS splitter **1958**, **1960**. The rest of the available bandwidth - - from about 10 kHz to 1 MHz - - carries data at rates up to 6 bits per second for every hertz of bandwidth from data equipment **1962**, **1964**, and **1994**. The ADSL equipment **1956** then has

access to a number of destinations including significantly the Internet **1920** or other data communications networks, and other destinations **1970, 1972.**

To exploit the higher frequencies, ADSL makes use of advanced modulation techniques, of which the best known is the discrete multitone (DMT) technology. As its name implies, ADSL transmits data asymmetrically - - at different rates upstream toward the central office **1952** and downstream toward the subscriber **1950.**

Cable television services are providing analogous Internet service to PC users over their TV cable systems by means of special cable modems. Such modems are capable of transmitting up to 30 Mb/s over hybrid fiber/coax system, which use fiber to bring signals to a neighborhood and coax to distribute it to individual subscribers.

Cable modems come in many forms. Most create a downstream data stream out of one of the 6-MHz TV channels that occupy spectrum above 50 MHz (and more likely 550 MHz) and carve an upstream channel out of the 5-50-MHz band, which is currently unused. Using 64-state quadrature amplitude modulation (64 QAM), a downstream channel can realistically transmit about 30 Mb/s (the oft-quoted lower speed of 10 Mb/s refers to PC rates associated with Ethernet connections). Upstream rates differ considerably from vendor to vendor, but good hybrid fiber/coax systems can deliver upstream speeds of a few megabits per second. Thus, like ADSL, cable modems transmit much more information downstream than upstream. Then Internet architecture **1920** and ADSL architecture **1954, 1956** may also be combined with, for example, user networks **1922, 1924,** and **1928.**

In accordance with the principles of the present invention, in one example, a main computing server implementing the process of the invention may be located on one or more computing nodes or terminals (e.g., on user networks **1922, 1924,** and **1928** or system **1940**). Then, various users may interface with the main server via, for instance, the ADSL equipment discussed above, and access the information and processes of the present invention from remotely located PCs. As illustrated in this embodiment, users may access, use or interact with the computer assisted program in computer system **1940** via various access methods. Databases **1985, 1986, 1987, 1988,** and **1940** are accessible via, for example computer system **1940** and may be used in conjunction with client manager module **1991,** tracking module **1992,** for the various functions described above.

Viewed externally in FIG. 20, a computer system designated by reference numeral **2040** has a computer **2042** having disk drives **2044** and **2046.** Disk drive indications **2044** and **2046** are merely symbolic of a number of disk drives which might be accommodated by the computer system. Typically, these would include a floppy disk drive **2044,** a hard disk drive (not shown externally) and a CD ROM indicated by slot **2046.** The number and type of drives vary, typically with different computer configurations. Disk drives **2044** and **2046** are in fact optional, and for space considerations, are easily omitted from the computer system used in conjunction with the production process/apparatus described herein.

The computer system also has an optional display upon which information screens may be displayed. In some situations, a keyboard **2050** and a mouse **2052** are provided as input devices through which a user's actions may be inputted, thus allowing input to interface with the central processing unit **2042**. Then again, for enhanced portability, the keyboard **2050** is either a limited function keyboard or omitted in its entirety. In addition, mouse **2052** optionally is a touch pad control device, or a track ball device, or even omitted in its entirety as well, and similarly may be used to input a user's selections. In addition, the computer system also optionally includes at least one infrared transmitter and/or infrared received for either transmitting and/or receiving infrared signals, as described below.

FIG. 21 illustrates a block diagram of one example of the internal hardware configured to perform a server function for the Web pages described above. A bus **2156** serves as the main information highway interconnecting various components therein. CPU **2158** is the central processing unit of the internal hardware **2140**, performing calculations and logic operations required to execute the control/operation processes of the present invention as well as other programs. Read only memory (ROM) **2160** and random access memory (RAM) **2162** constitute the main memory of the internal hardware 2140. Disk controller **2164** interfaces one or more disk drives to the system bus **2156**. These disk drives are, for example, floppy disk drives **2170**, or CD ROM or DVD (digital video disks) drives **2166**, or internal or external hard drives **2168**. These various disk drives and disk controllers are optional devices.

A display interface **2172** interfaces display **2148** and permits information from the bus **2156** to be displayed on display **2148**. Display **2148** may be used in displaying various Web pages. Communications with external devices such as the other components of the system described above, occur utilizing, for example, communication port **2174**. Optical fibers and/or electrical cables and/or conductors and/or optical communication (e.g., infrared, and the like) and/or wireless communication (e.g., radio frequency (RF), and the like) can be used as the transport medium between the external devices and communication port **2174**. Peripheral interface **2154** interfaces the keyboard **2150** and mouse **2152**, permitting input data to be transmitted to bus **2156**. In addition to these components, the internal hardware **2140** also optionally include an infrared transmitter and/or infrared receiver. Infrared transmitters are optionally utilized when the computer system is used in conjunction with one or more of the processing components/stations/modules that transmits/receives data via infrared signal transmission. Instead of utilizing an infrared transmitter or infrared receiver, the computer system may also optionally use a low power radio transmitter **2180** and/or a low power radio receiver **2182**. The low power radio transmitter transmits the signal for reception by components of the production process, and receives signals from the components via the low power radio receiver. The low power radio transmitter and/or receiver are standard devices in industry.

Although the server in FIG. 21 is illustrated having a single processor, a single hard disk drive and a single local memory, the analyzer is optionally suitably equipped with any multitude or

combination of processors or storage devices. For example, the computer may be replaced by, or combined with, any suitable processing system operative in accordance with the principles of embodiments of the present invention, including sophisticated calculators, and hand-held, laptop/notebook, mini, mainframe and super computers, as well as processing system network combinations of the same.

FIG. 22 is an illustration of an example computer readable memory medium **2284** utilizable for storing computer readable code or instructions. As one example, medium **2284** may be used with disk drives illustrated in FIG. 21. Typically, memory media such as floppy disks, or a CD ROM, or a digital video disk will contain, for example, a multi-byte locale for a single byte language and the program information for controlling the modeler to enable the computer to perform the functions described herein. Alternatively, ROM **2160** and/or RAM **2162** illustrated in FIG. 21 can also be used to store the program information that is used to instruct the central processing unit **2158** to perform the operations associated with various automated processes of the present invention. Other examples of suitable computer readable media for storing information include magnetic, electronic, or optical (including holographic) storage, some combination thereof, etc.

In general, it should be emphasized that the various components of embodiments of the present invention can be implemented in hardware, software or a combination thereof. In such embodiments, the various components and steps would be implemented in hardware and/or software to perform the functions of embodiments of the present invention. Any presently available or future developed computer software language and/or hardware components can be employed in such embodiments of the present invention. For example, at least some of the functionality mentioned above could be implemented using Visual Basic, C, C++, or any assembly language appropriate in view of the processor(s) being used. It could also be written in an interpretive environment such as Java and transported to multiple destinations to various users.

The many features and advantages of embodiments of the present invention are apparent from the detailed specification, and thus, it is intended by the appended claims to cover all such features and advantages of the invention which fall within the true spirit and scope of the invention. Further, since numerous modifications and variations will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation illustrated and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

Claims

What is claimed is:

1. A computer-assisted method of providing, to a health care provider, information relating to a patient, said method comprising the steps of:

(a) collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions;

(b) storing the prescription history and prescription purchase history information of the patient into a database;

(c) accessing, only by the patient or a representative of the patient, under the direction of the patient or the representative, and under the authorization by the patient or the representative, the information stored in the database for the prescription history and prescription purchase history of the patient;

(d) retrieving the information relating to prescription history and prescription purchase history by the patient or the representative; and

(e) communicating, by the patient or the representative, the information retrieved relating to the prescription history and prescription purchase history to the health care provider in order to assist the health care provider in providing health care to the patient.

2. The method of claim 1, wherein step (e), communicating information by the patient further comprises the steps of:

printing information relating to the retrieved prescription history and prescription purchase history; and

presenting, by the patient or the representative, the printed information to the health care provider.

3. The method of claim 2 , wherein the printing step comprises the steps of:

combining the information relating to the retrieved prescription history and prescription purchase history; and

formatting the combined information into a form presentable the health care provider.

4. The method of claim 1, wherein step (e) of communicating by the patient comprises:

sending, by the patient, to the health care provider an electronic message that contains the retrieved prescription history and prescription purchase history.

5. The method of claim 4, wherein the electronic message is delivered to a platform that is capable of receiving an electronic message.

6. The method of claim 1, wherein step (a) further comprises the step of:

collecting the prescription history and prescription purchase history information when the one or more prescriptions are issued by different health care providers.

7. The method of claim 1, wherein the step (a) collecting prescription history further comprises the step of:

collecting the prescription history and prescription purchase history information when drugs prescribed in the one or more prescriptions are purchased from different pharmacists.

8. The method of claim 7, wherein the different pharmacists at least one of a retail pharmacy, pharmaceutical benefits management company and [should this be or?] mail delivery pharmacy.

9. The method, wherein step (b) of claim 1, further comprising the step of:

storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient.

10. The method of claim 9 further comprising the steps of:

accessing, by the patient or the representative [is this broad enough to cover patient's guardian, for example?], the database for the stored information relating to pharmacy benefits for the patient and the preferred drug formulary; and

retrieving the information relating to pharmacy benefits for the patient and the preferred drug formulary.

11. The method of claim 10 further comprising the steps of:

printing the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history; and

presenting, by the patient or the representative, the printed information to the health care provider.

12. The method of claim 11, wherein the printing step comprises the steps of:

combining the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history; and

formatting the combined information into a form presentable to the health care provider.

13. The method according to claim 12, wherein the health care provider is at least one of a physician, osteopath and pharmacist.

14. The method of Claim 1, wherein the representative of the patient is at least one of patient's parent and patient's guardian.

15. A method of providing, to a health care provider, information relating to patient's health care, said method comprising the steps, to a health care provider of:

(a) collecting a prescription history that includes information relating to one or more prescriptions issued to the patient,d a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions;

(b) storing the prescription history and prescription purchase history information of the patient into a database;

(c) storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient.

(d) accessing, only by the patient or a representative of the patient, under the direction of the patient or the representative, and under the authorization by the patient or the representative, the database for the stored information;

(e) retrieving the accessed information; and

(f) communicating, by the patient or the representative, the retrieved information to the health care provider in order to assist the health care provider in providing medical services to the patient wherein the health care information is suitable for assisting the health care provider to render health care at a point of care.

16. The method of claim 15, wherein step (e) of communicating by the patient comprises the steps of:

printing the retrieved information; and

presenting, by or the representative the patient, the printed information to the health care provider.

17. The method of claim 16, wherein the printing step comprises the steps of:

combining the retrieved information; and

formatting the combined information into a form presentable the health care provider .

18. The method of claim 15, wherein step (f) of communicating by the patient comprises:

sending, by the patient or the representation, to the health care provider an electronic message that contains the retrieved information.

19. The method of claim 18, wherein the electronic message is delivered to a platform that is capable of receiving an electronic message.

20. The method of claim 15, wherein step (a) further comprises the step of:

collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different health care providers.

21. The method of claim 15, wherein the step (a) further comprises the step of:

collecting the prescription history and prescription purchase history information when drugs prescribed in the one or more prescriptions are purchased from different pharmacists.

22. The method of claim 21, wherein the different pharmacists include at least one of a retail pharmacy, pharmaceutical benefits management company and mail delivery pharmacy.

23. The method according to claim 15, wherein the health care provider is at least one of a physician, osteopath and pharmacist.

24. The method of claim 15, wherein the representative of the patient is at least one of patient's parent and patient's guardian.

25. A computer assisted system for providing, to a health care provider, information relating to a patient, said system comprising:

(a) means for collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions;

(b) means for storing the prescription history and prescription purchase history information of the patient into a database;

(c) means for accessing, only for the patient under the direction of the patient and under the authorization by the patient, the database for the stored prescription history and prescription purchase history information of the patient;

(d) means for retrieving the prescription history and prescription purchase history; and

(e) means for communicating, for the patient, the retrieved prescription history and prescription purchase history to the prescriber health care provider in order to assist the provider in providing medical services to the patient, to thereby allow the health care provider to compare one or more issued prescriptions and the prescription purchase history.

26. The system of claim 25, wherein the means (e) for communicating for the patient comprises:

means for printing information relating to the retrieved prescription history and prescription purchase history, to thereby allow to present the printed information to the health care provider for the patient.

27. The system of claim 26, wherein the printing means comprises:

means for combining the information relating to the retrieved prescription history and prescription purchase history; and

means for formatting the combined information into a form presentable the health care provider.

28. The system of claim 25, wherein the means (e) for communicating for the patient comprises:

means for sending, for the patient, to the health care provider an electronic message that contains the retrieved prescription history and prescription purchase history.

29. The system of claim 28, wherein the electronic message is delivered to a platform that is capable of receiving an electronic message.

30. The system of claim 25, wherein the means (a) further comprises:

means for collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by on or more health care providers.

31. The system of claim 25, wherein the means (a) further comprises:

means for collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from one or more pharmacists.

32. The system of claim 31, wherein the different pharmacists include at least one pharmacy that delivers the one or more prescriptions via mail.

33. The system of claim 25 further comprising:

means for providing and storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient., wherein the pharmacy benefits and drug formulary information are suitable for assisting the health care provider to provide medical treatment to the patient.

34. The system of claim 33 further comprising:

means for accessing, for the patient, the database for the stored information relating to pharmacy benefits for the patient and the preferred drug formulary; and

means for retrieving the information relating to pharmacy benefits for the patient and the preferred drug formulary.

35. The system of claim 34 further comprising:

means for printing the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history, thereby allowing to present the printed information to the health care provider for the patient.

36. The system of claim 35, wherein the printing means comprises:

means for combining the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history; and

means for formatting the combined information into a form presentable the health care provider.

37. The system of claim 25, wherein the health care provider is at least one of a physician, osteopath and pharmacist.

38. A system of providing, to a health care provider, information relating to a patient, said system comprising:

(a) means for collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions and collecting pharmacy benefits and drug formulary preformed by pharmacy insurance carrier;

(b) means for storing the prescription history and prescription purchase history of the patient into a database;

(c) means for storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient.

(d) means for accessing, only for the patient under the direction of the patient, and under the authorization by the patient, the database for the stored information;

(e) means for retrieving the accessed information; and

(f) means for communicating, by or on behalf of the patient, the retrieved information to the health care provider in order to assist the provider in providing medical services to the patient.

39. The system of claim 38, wherein the means(e) for retrieving by the patient comprises:

means for printing, by or on behalf of the patient, the retrieved information, to thereby allow the patient to present the printed information to the provider.

40. The system of claim 39, wherein the printing means comprises:

means for combining the retrieved information; and

means for formatting the combined information into a form presentable the provider.

41. The system of claim 38, wherein the means (f) for communicating by the patient comprises:

means for sending, by or for the patient, to the provider an electronic message that contains the retrieved information.

42. The system of claim 41, wherein the electronic message is at least one of a PDA message, PC message, pager message, fax message.

43. The system of claim 38, wherein the means for collecting (a), further comprises:

means for collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by one or more prescribers.

44. The system of claim 43, wherein the means for collecting(a) further comprises:

means for collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from one or more pharmacists.

45. The system of claim 44, wherein the different pharmacists include at least one retail pharmacy and mail order pharmacy.

46. The system of claim 38, wherein the health care provider is at least one of a physician, osteopath and pharmacist.

47. A computer readable medium for storing instructions being executed by one or more computers, the instructions directing the one or more computers for providing, to a medical care provider, prescription and insurance information relating to a patient, the instructions comprising implementation of the steps of:

(a) collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions formulary and insurance coverage;

(b) storing the prescription history and prescription purchase history of the patient into a database;

(c) accessing, only by the patient, under the direction of the patient and under the authorization by the patient, the database for the stored prescription history and prescription purchase history of the patient;

(d) retrieving the prescription history and prescription purchase history; and

(e) communicating the retrieved prescription history and prescription purchase history to the medical care provider in order to assist the medical care provider in providing medical services to the patient, wherein the accessing step and the communicating step are initiated by the patient.

48. The medium of claim 47, wherein the step (e) of communicating by the patient comprises the step of:

printing information relating to the retrieved prescription history and prescription purchase history, to thereby allow the patient to present the printed information to the medical care provider.

49. The medium of claim 48, wherein the printing step comprises the steps of:

combining the information relating to the retrieved prescription history and prescription purchase history; and

formatting the combined information into a form presentable the medical care provider.

50. The medium of claim 47, wherein the step (e) of communicating by the patient comprises:

sending to the medical care provider an electronic message that contains the retrieved prescription history and prescription purchase history.

51. The medium of claim 50, wherein the electronic message is a PDA message.

52. The medium of claim 47, wherein the step (a) further comprises the step of:

collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different medical care providers.

53. The medium of claim 47, wherein the step (a) further comprises the step of:

collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from different pharmacists.

54. The medium of claim 53, wherein the different pharmacists include at least one pharmacy that delivers the one or more prescriptions via mail.

55. The medium of claim 47 further comprising the step of:

storing to the database information relating to pharmacy benefits for the patient and information relating to a drug formulary preferred by a pharmacy insurance carrier of the patient.

56. The medium of claim 55 further comprising the steps of:

accessing the database for the stored information relating to pharmacy benefits for the patient and the preferred drug formulary; and

retrieving the information relating to pharmacy benefits for the patient and the preferred drug formulary, wherein the accessing step is initiated by the patient.

57. The medium of claim 56 further comprising the steps of:

printing the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history, to thereby allow the patient to present the printed information to the medical care provider.

58. The medium of claim 57, wherein the printing step comprises the steps of:

combining the information relating to pharmacy benefits for the patient and the preferred drug formulary and information relating to the retrieved prescription history and prescription purchase history; and

formatting the combined information into a form presentable the medical care provider.

59. The medium of claim 47, wherein the medical care provider is at least one of a physician, osteopath and pharmacist.

60. A computer readable medium including instructions being executed by one or more computers, the instructions instructing the one or more computers for providing, to a physician, information relating to a patient, the instructions comprising implementation of the steps of:

(a) collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more purchases made by the patient in accordance with the one or more prescriptions, insurance coverage and formulary information;

(b) storing the prescription history and prescription purchase history of the patient into a database;

(c) accessing, by the patient, under the direction of the patient and under the authorization by the patient the database for the stored information;

(d) retrieving the accessed information; and

(e) communicating the retrieved information to the physician in order to assist the physician in providing medical services to the patient, wherein the assessing step and the communicating step are initiated by the patient.

61. The medium of claim 60, wherein the step (e) of communicating by the patient comprises the steps of:

printing, by the patient, the retrieved information, to thereby allow the patient to present the printed information to the physician.

62. The medium of claim 61 , wherein the printing step comprises the steps of:

combining the retrieved information; and

formatting the combined information into a form presentable the physician.

63. The medium of claim 60, wherein the step (f) of communicating by the patient comprises:

sending, by the patient, to the physician an electronic message that contains the retrieved information.

64. The medium of claim 63, wherein the electronic message is a PDA message.

65. The medium of claim 60, wherein the step (a) further comprises the step of:

collecting the prescription history and prescription purchase history when the one or more prescriptions are issued by different physicians.

66. The medium of claim 60, wherein the step (a) further comprises the step of:

collecting the prescription history and prescription purchase history when drugs prescribed in the one or more prescriptions are purchased from different pharmacists.

67. The medium of claim 60, wherein the step (a) further comprises the step of:

collecting the prescription history and prescription purchase history when one or more drug prescribed in the one or more prescriptions are purchased from different pharmacists that use different databases to store the collected information.

68. The medium of claim 66, wherein the different pharmacists include at least one pharmacy that delivers the one or more prescriptions via mail.

69. The medium of claim 60, wherein the step (c) further comprises the step of:

allowing the patient to access stored information relating to family members of the patient.

70. The medium of claim 60, wherein the step (c) further comprises the step of:

allowing the patient to access stored information relating to, at least one of, prescriptions filled by a mail prescription filler and prescriptions filled by a local pharmacy store.

71. The medium of claim 60, wherein the prescription information includes, at least one of:

a prescription number;

a prescribed drug name;

the name of the physician;

a number of remaining refills;

a date on which the prescription was received; and

a date on which the prescription was shipped.

72. The medium of claim 60, wherein the step (c) further comprises the step of allowing the patient to access information related to at least one of benefits, a prescription expense summary, and an account summary.

73. The medium of claim 60, further comprising the steps of allowing the patient to perform at least one of:

locating a retail pharmacy;

requesting envelopes and forms for returning filled prescriptions;

printing a mail service form;

refilling or renewing a prescription;

requesting a new prescription;

starting with mail service; and

purchasing over-the-counter pharmaceutical and other products.

74. The medium of claim 61, wherein the patient is allowed to print additional information related to at least one of:

one or more requests made by the patient;

a formulary of drugs; and

a form to fax a prescription.

75. The medium of claim 61, wherein the patient is allowed collect information relating to self-help using the printed information.

76. The medium of claim 61, wherein the patient is allowed to print additional information related to at least one of:

days past refill date;

information on one or more prescriptions that are currently in process or open that the patient has requested to renew;

information on one or more prescriptions that are currently in process or open that the patient has requested to fill by mail;

a type of coverage that is currently available to the patient;

a total number of days of drug supplies allowed to be dispensed to the patient;

a dollar amount to be paid by the patient when a generic medication is dispensed; and

a dollar amount to be paid by the patient when a brand name medication is dispensed.

77. The medium of claim 61, further comprises the step of:

creating a patient field in the database when the patient is a new patient.

78. The medium of claim 60, wherein the health care provider is at least one of a physician, osteopath and pharmacist.

79. A computer-assisted method of providing, to a physician, information relating to a patient, said method comprising the steps of:

(a) collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions;

(b) storing the prescription history and prescription purchase history information of the patient into a database;

(c) accessing, only by the patient or a representative of the patient, under the direction of the patient or the representative, and under the authorization by the patient or the representative, the information stored in the database for the prescription history and prescription purchase history of the patient;

(d) retrieving the information relating to prescription history and prescription purchase history by the patient or the representative; and

(e) communicating, by the patient or the representative, the information retrieved relating to the prescription history and prescription purchase history to the physician in order to assist the physician in providing medical care to the patient.

80. A computer assisted system for providing, to a physician, information relating to a patient, said system comprising:

(a) means for collecting a prescription history that includes information relating to one or more prescriptions issued to the patient and a prescription purchase history that includes information relating to one or more prescription purchases made by the patient in accordance with the one or more prescriptions;

(b) means for storing the prescription history and prescription purchase history information of the patient into a database;

(c) means for accessing, only for the patient under the direction of the patient and under the authorization by the patient, the database for the stored prescription history and prescription purchase history information of the patient;

(d) means for retrieving the prescription history and prescription purchase history; and

(e) means for communicating, for the patient, the retrieved prescription history and prescription purchase history to the physician provider in order to assist the provider in providing medical services to the patient, to thereby allow the physician to compare issued one or more prescriptions and the prescription purchase history.

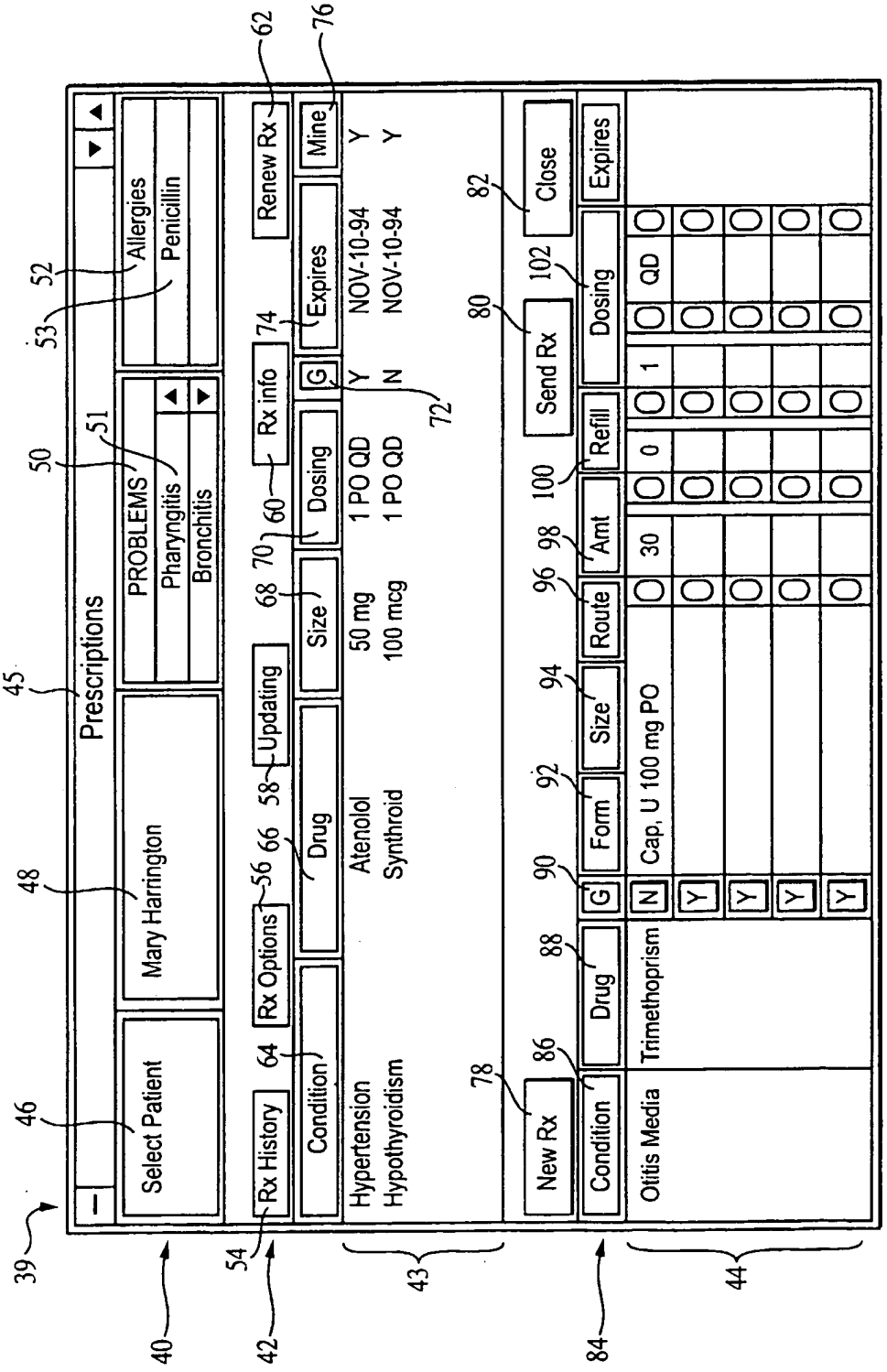


FIG. 1
PRIOR ART

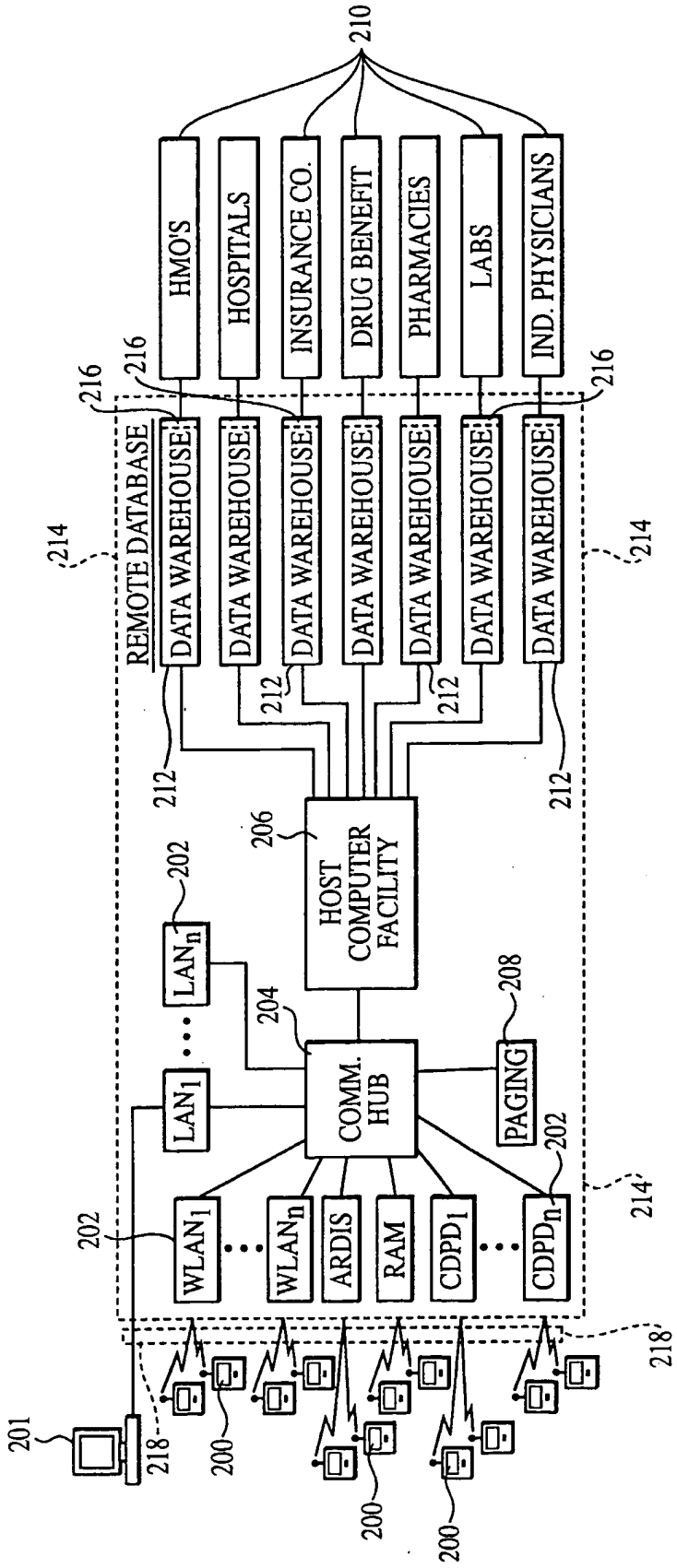


FIG. 2
PRIOR ART

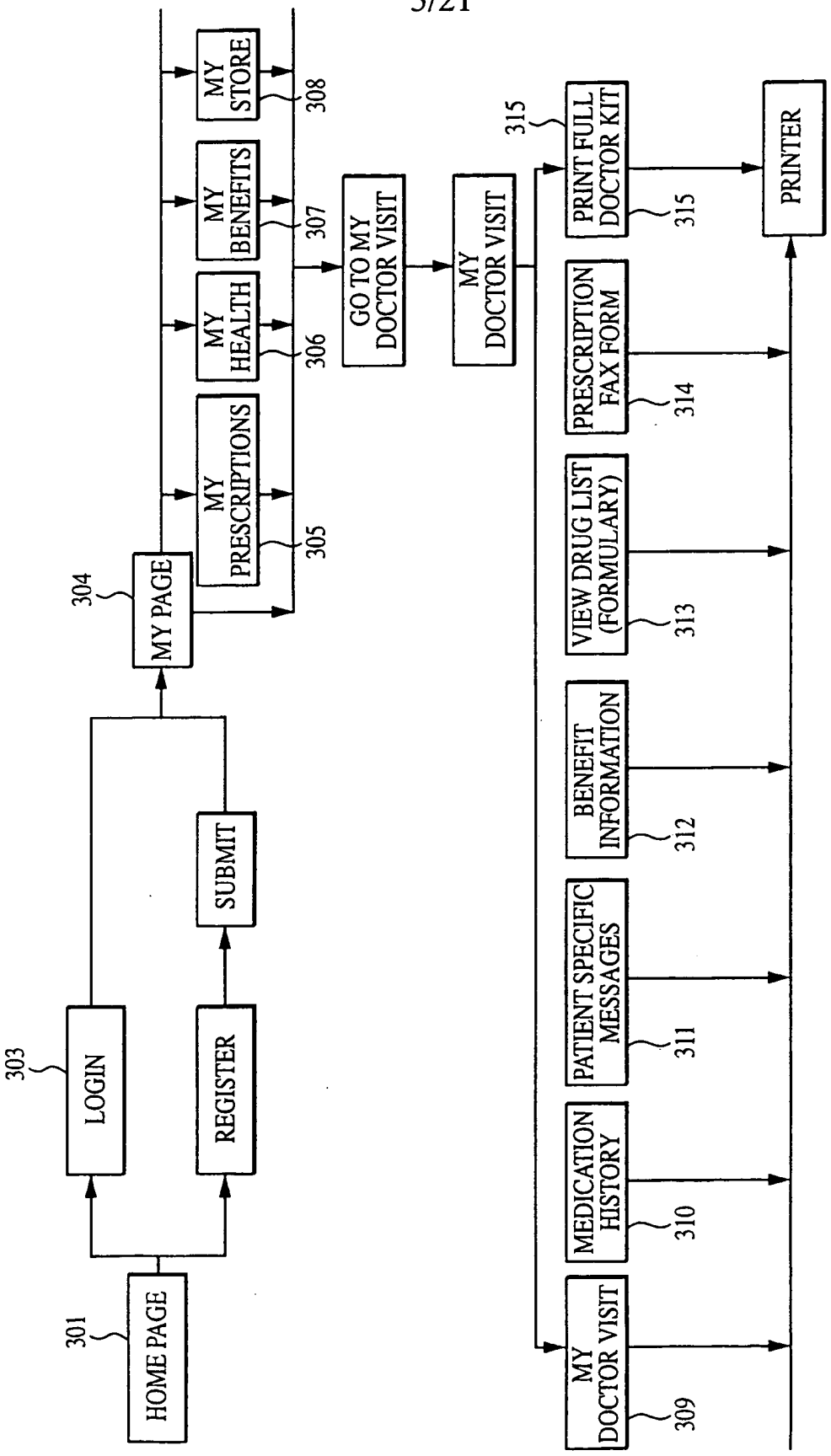

HOME PAGE
301
LOGIN
303
REGISTER
SUBMIT
MY PAGE
304
MY PRESCRIPTIONS
305
MY HEALTH
306
MY BENEFITS
307
MY STORE
308
GO TO MY DOCTOR VISIT
MY DOCTOR VISIT
315
MY DOCTOR VISIT
309
MEDICATION HISTORY
310
PATIENT SPECIFIC MESSAGES
311
BENEFIT INFORMATION
312
VIEW DRUG LIST (FORMULARY)
313
PRESCRIPTION FAX FORM
314
PRINT FULL DOCTOR KIT
315
PRINTER

FIG. 3

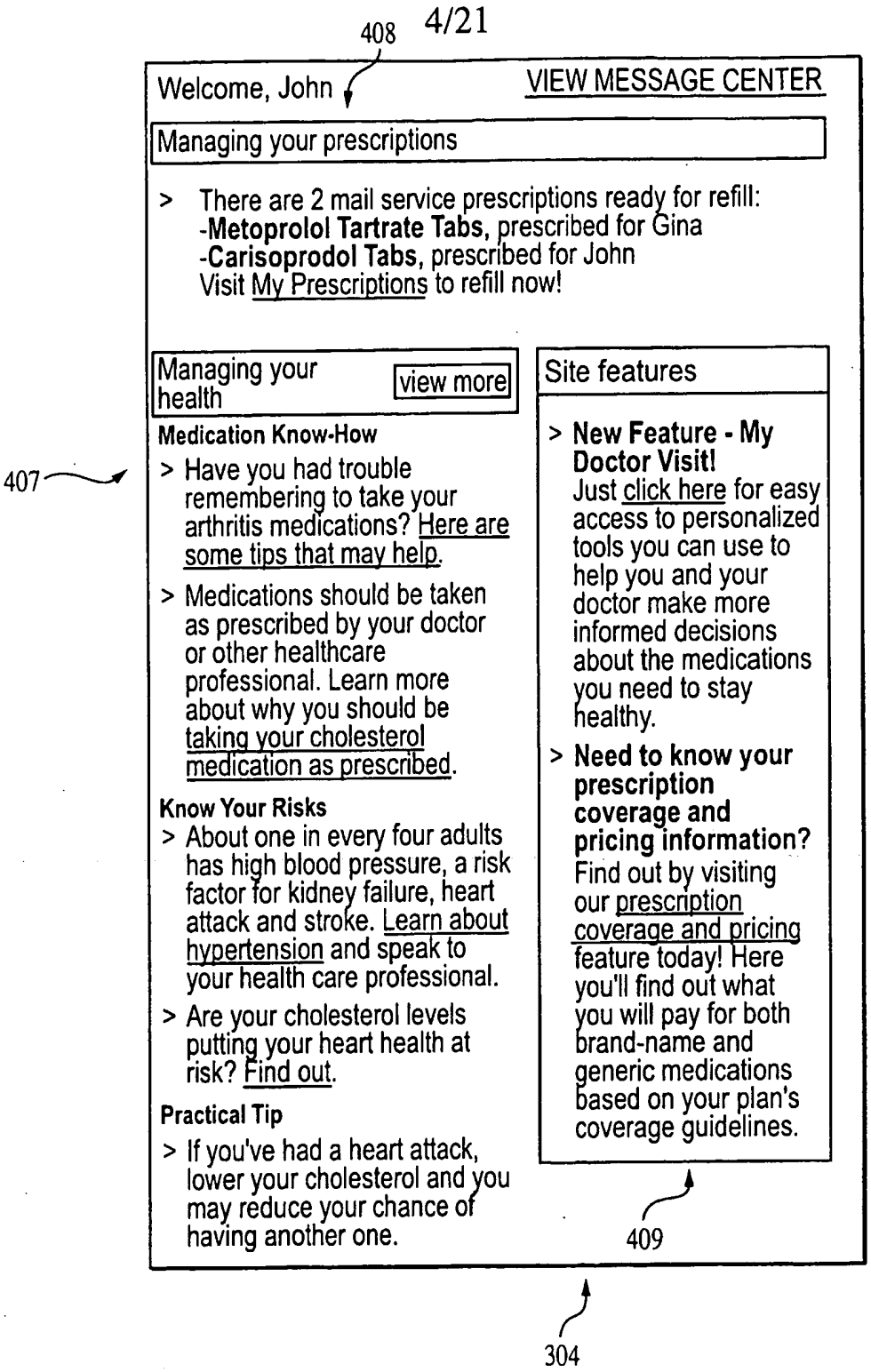

408
Welcome, John
VIEW MESSAGE CENTER
Managing your prescriptions
> There are 2 mail service prescriptions ready for refill:
-Metoprolol Tartrate Tabs, prescribed for Gina
-Carisoprodol Tabs, prescribed for John
Visit My Prescriptions to refill now!
Managing your health
view more
Medication Know-How
407
> Have you had trouble remembering to take your arthritis medications? Here are some tips that may help.
> Medications should be taken as prescribed by your doctor or other healthcare professional. Learn more about why you should be taking your cholesterol medication as prescribed.
Know Your Risks
> About one in every four adults has high blood pressure, a risk factor for kidney failure, heart attack and stroke. Learn about hypertension and speak to your health care professional.
> Are your cholesterol levels putting your heart health at risk? Find out.
Practical Tip
> If you've had a heart attack, lower your cholesterol and you may reduce your chance of having another one.
Site features
> New Feature - My Doctor Visit! Just click here for easy access to personalized tools you can use to help you and your doctor make more informed decisions about the medications you need to stay healthy.
> Need to know your prescription coverage and pricing information? Find out by visiting our prescription coverage and pricing feature today! Here you'll find out what you will pay for both brand-name and generic medications based on your plan's coverage guidelines.
409
304

FIG. 4

PRESCRIPTION COVERAGE & PRICING | REFILL HOUSEHOLD PRESCRIPTIONS | HOUSEHOLD RX STATUS (?)

503 505 507

Mail Prescriptions | Retail Prescriptions | Rx Archive

My Doctor Visit

Items in cart: 0

View orders by: Refillable/Renewable

Print this page

You have 2 prescription(s) in your Rx Archive. Click here to view.

Click on the **Prescription Number(s)** below for the detailed history for this prescription.
Click on the **Drug Name(s)** below for the detailed history about this medication.

305

	Prescription (Rx) Number Drug information Patient Name	Date Received	Date Shipped	Refills Remaining
ADD TO CART	123456789012 Metoprolol Tartrate Tabs 50mg **Gina** **Status: Ready for refill.** This prescription can be refilled today! To order this prescription, simply select the "add to cart" option in the first column of this row.	Oct 2, 2000	Oct 6, 2000	3 after this refill
ADD TO CART	992310090501 Carisoprodol tabs 350mg **John** **Status: Shipped Oct 20, 2001.** This prescription was shipped via United States Postal Service. To remove this prescription from view, **click here to add to Rx Archive.**	Oct 15, 2000	Oct 20, 2000	2 after this refill
	992310090501 Nasonex Nasal Spray 50mcg **Gina** **Status: Shipped Dec 29, 2001.** This prescription was shipped via United States Postal Service. To remove this prescription from view, **click here to add to Rx Archive.**	Dec 28, 2000	Dec 29, 2000	2 after this refill
ADD TO CART	992310091501 K-dur sr tabs 20meq **John** **Status: Prescription Pended.** This prescription was requested prior to the eligible refill date. For your convenience, your mail service pharmacy is holding this prescription and will process this prescription on Feb 03, 2001. Please check order status after this date. To remove this prescription from view, **click here to add to Rx Archive.**	Dec 28, 2000		1 after this refill

FIG. 5

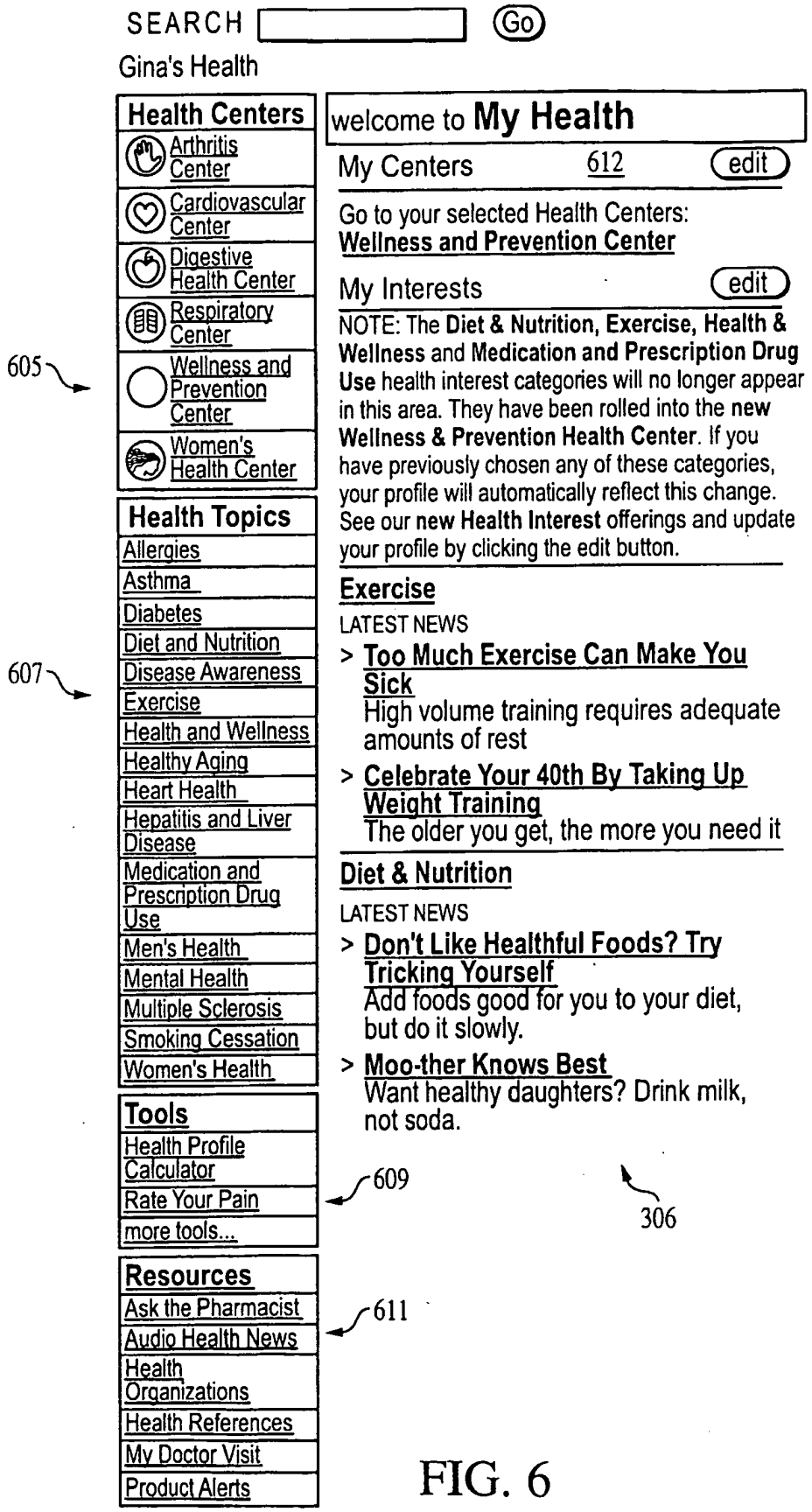

SEARCH
Go
Gina's Health
Health Centers
Arthritis Center
Cardiovascular Center
Digestive Health Center
Respiratory Center
Wellness and Prevention Center
Women's Health Center
605
Health Topics
Allergies
Asthma
Diabetes
Diet and Nutrition
Disease Awareness
Exercise
Health and Wellness
Healthy Aging
Heart Health
Hepatitis and Liver Disease
Medication and Prescription Drug Use
Men's Health
Mental Health
Multiple Sclerosis
Smoking Cessation
Women's Health
607
Tools
Health Profile Calculator
Rate Your Pain
more tools...
609
Resources
Ask the Pharmacist
Audio Health News
Health Organizations
Health References
My Doctor Visit
Product Alerts
611
welcome to My Health
My Centers
612
edit
Go to your selected Health Centers:
Wellness and Prevention Center
My Interests
edit
NOTE: The Diet & Nutrition, Exercise, Health & Wellness and Medication and Prescription Drug Use health interest categories will no longer appear in this area. They have been rolled into the new Wellness & Prevention Health Center. If you have previously chosen any of these categories, your profile will automatically reflect this change. See our new Health Interest offerings and update your profile by clicking the edit button.
Exercise
LATEST NEWS
> Too Much Exercise Can Make You Sick
High volume training requires adequate amounts of rest
> Celebrate Your 40th By Taking Up Weight Training
The older you get, the more you need it
Diet & Nutrition
LATEST NEWS
> Don't Like Healthful Foods? Try Tricking Yourself
Add foods good for you to your diet, but do it slowly.
> Moo-ther Knows Best
Want healthy daughters? Drink milk, not soda.
306

FIG. 6

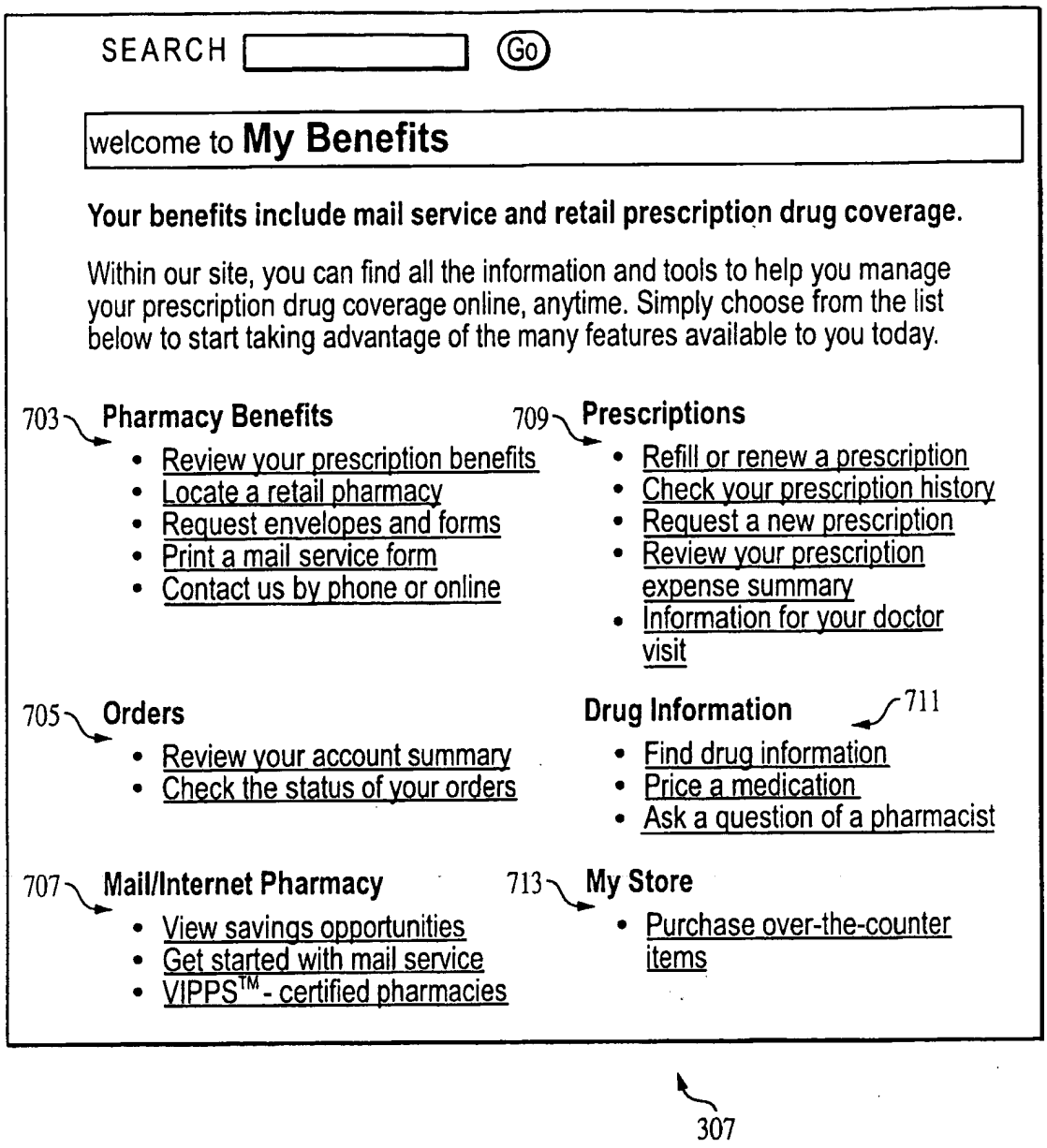

SEARCH
Go
welcome to My Benefits
Your benefits include mail service and retail prescription drug coverage.
Within our site, you can find all the information and tools to help you manage your prescription drug coverage online, anytime. Simply choose from the list below to start taking advantage of the many features available to you today.
703
Pharmacy Benefits
Review your prescription benefits
Locate a retail pharmacy
Request envelopes and forms
Print a mail service form
Contact us by phone or online
709
Prescriptions
Refill or renew a prescription
Check your prescription history
Request a new prescription
Review your prescription expense summary
Information for your doctor visit
705
Orders
Review your account summary
Check the status of your orders
Drug Information
711
Find drug information
Price a medication
Ask a question of a pharmacist
707
Mail/Internet Pharmacy
View savings opportunities
Get started with mail service
VIPPS™ - certified pharmacies
713
My Store
Purchase over-the-counter items
307

FIG. 7

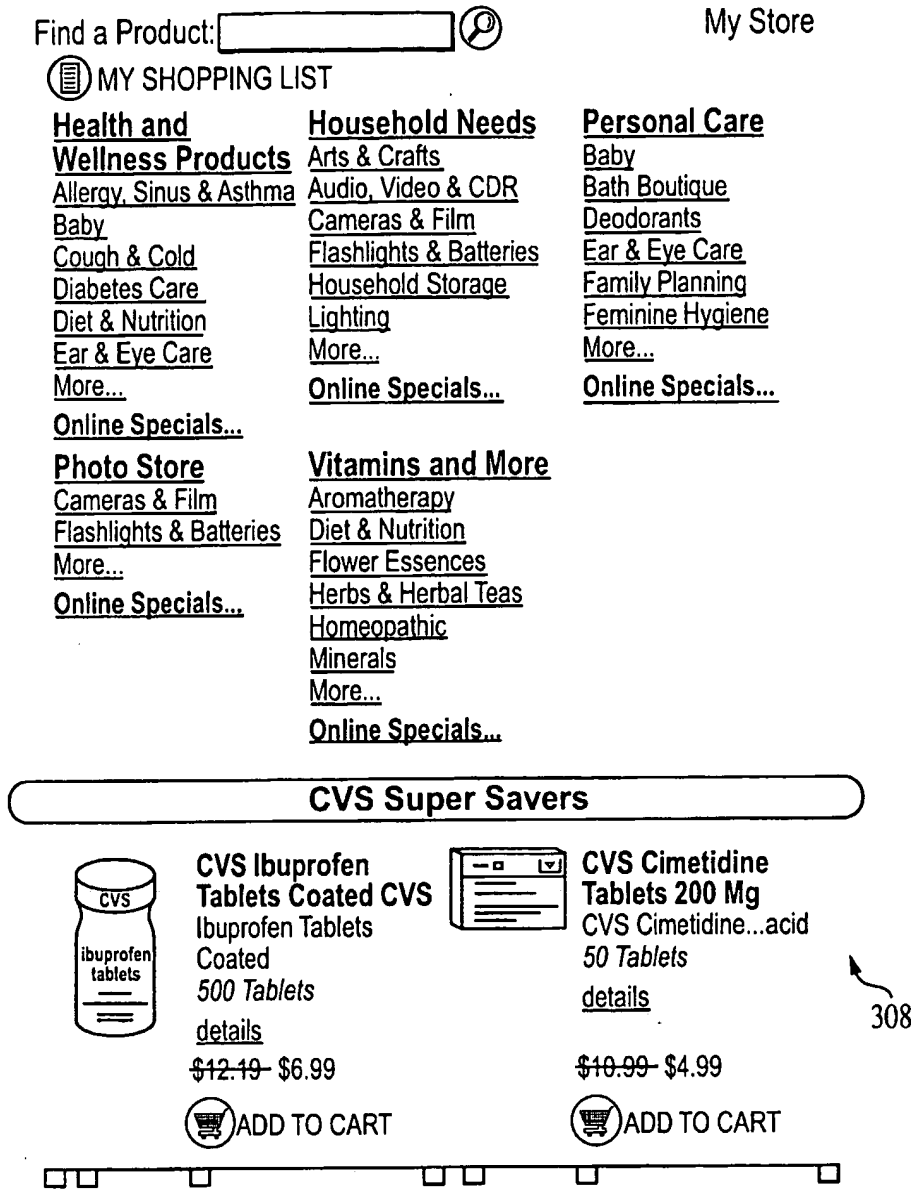

Find a Product:
My Store
MY SHOPPING LIST
Health and Wellness Products
Allergy, Sinus & Asthma
Baby
Cough & Cold
Diabetes Care
Diet & Nutrition
Ear & Eye Care
More...
Online Specials...
Household Needs
Arts & Crafts
Audio, Video & CDR
Cameras & Film
Flashlights & Batteries
Household Storage
Lighting
More...
Online Specials...
Personal Care
Baby
Bath Boutique
Deodorants
Ear & Eye Care
Family Planning
Feminine Hygiene
More...
Online Specials...
Photo Store
Cameras & Film
Flashlights & Batteries
More...
Online Specials...
Vitamins and More
Aromatherapy
Diet & Nutrition
Flower Essences
Herbs & Herbal Teas
Homeopathic
Minerals
More...
Online Specials...
CVS Super Savers
CVS
ibuprofen tablets
CVS Ibuprofen Tablets Coated CVS
Ibuprofen Tablets Coated
500 Tablets
details
$12.19 $6.99
ADD TO CART
CVS Cimetidine Tablets 200 Mg
CVS Cimetidine...acid
50 Tablets
details
$10.99 $4.99
ADD TO CART
308

FIG. 8

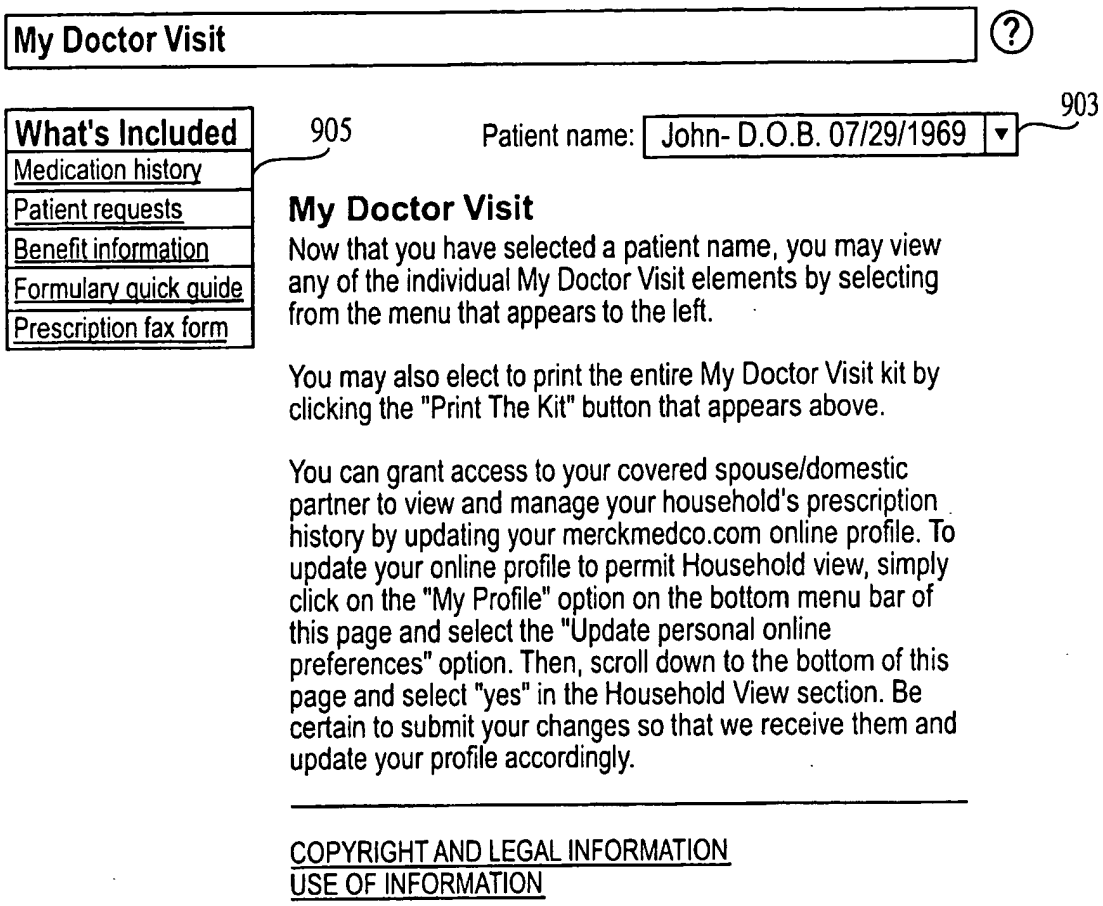

My Doctor Visit
What's Included
Medication history
Patient requests
Benefit information
Formulary quick guide
Prescription fax form
905
Patient name: John- D.O.B. 07/29/1969
903
My Doctor Visit
Now that you have selected a patient name, you may view any of the individual My Doctor Visit elements by selecting from the menu that appears to the left.
You may also elect to print the entire My Doctor Visit kit by clicking the "Print The Kit" button that appears above.
You can grant access to your covered spouse/domestic partner to view and manage your household's prescription history by updating your merckmedco.com online profile. To update your online profile to permit Household view, simply click on the "My Profile" option on the bottom menu bar of this page and select the "Update personal online preferences" option. Then, scroll down to the bottom of this page and select "yes" in the Household View section. Be certain to submit your changes so that we receive them and update your profile accordingly.
COPYRIGHT AND LEGAL INFORMATION
USE OF INFORMATION

FIG. 9

My Doctor Visit | Print The Kit | ?

> My Doctor Visit

What's Included
- Medication history
- Patient requests
- Benefit information
- Formulary quick guide
- Prescription fax form

Patient name: John- D.O.B. 07/29/1969

Medication history

This section of My Doctor Visit lists all available prescription information for the patient selected above.

Sharing this information with your doctor is important, especially if you are seeing more than one physician. It can help ensure that your doctor is aware of every medication your plan is providing. Your doctor can use this information to avoid possible drug interactions when prescribing drugs for you.

✉ prescription filled through your mail-service pharmacy
prescription filled at a retail (walk-in) pharmacy

Prescription (Rx) number/ Medication name/ strength	Rx filled at	Date filled	Qty	Days supply	Days past refill date
#123456789012 Cholestyramine 250mg		11/31/00	60	30	30
#123456789013 Cholestyramine 250mg		10/31/00	60	30	60
#123456789014 Lotensin 100mg	✉	11/04/00	180	90	0
#123456789015 Lotensin 100mg	✉	08/04/00	180	90	30

1003

FIG. 10

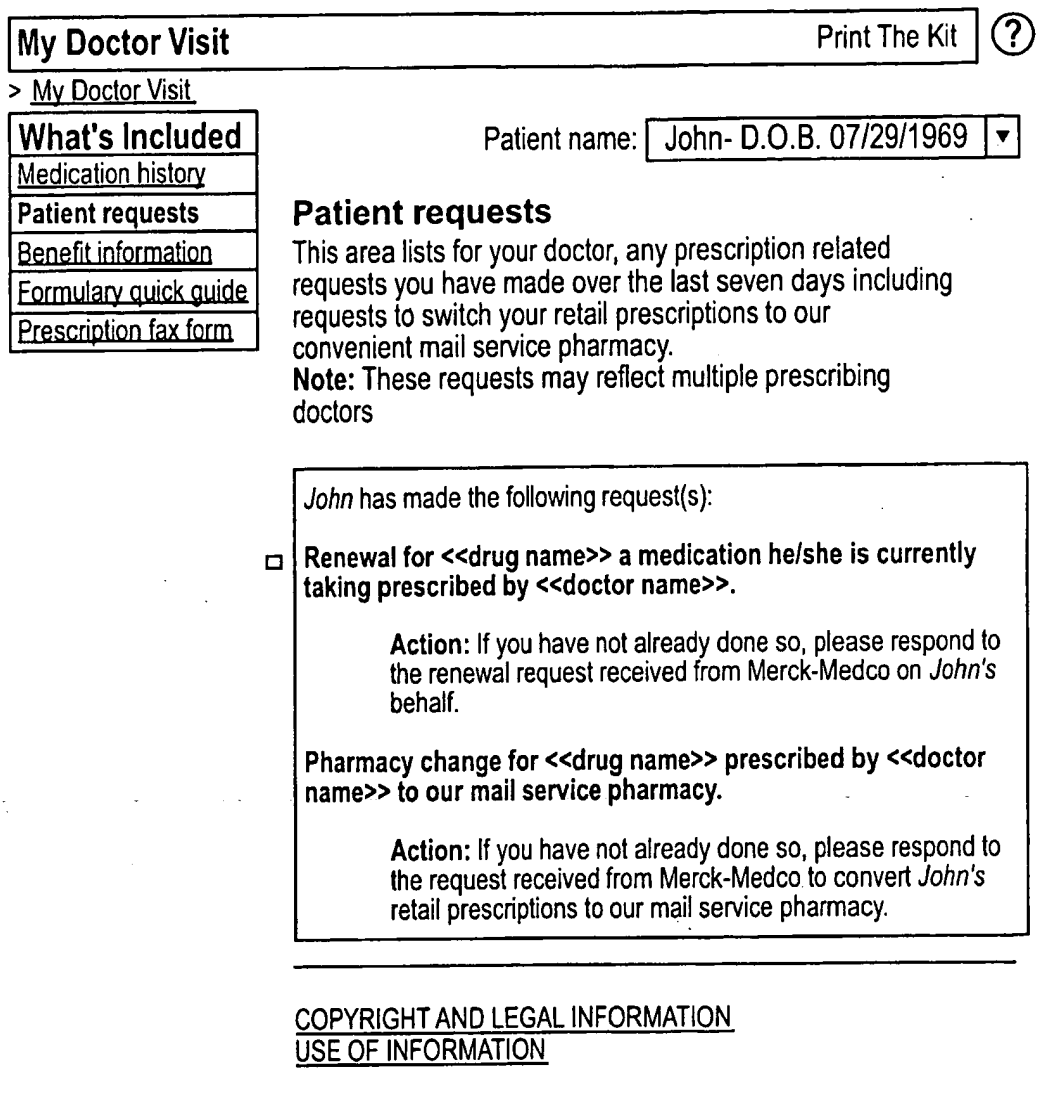

My Doctor Visit
Print The Kit
> My Doctor Visit
What's Included
Medication history
Patient requests
Benefit information
Formulary quick guide
Prescription fax form
Patient name: John- D.O.B. 07/29/1969
Patient requests
This area lists for your doctor, any prescription related requests you have made over the last seven days including requests to switch your retail prescriptions to our convenient mail service pharmacy.
Note: These requests may reflect multiple prescribing doctors
John has made the following request(s):
Renewal for <<drug name>> a medication he/she is currently taking prescribed by <<doctor name>>.
Action: If you have not already done so, please respond to the renewal request received from Merck-Medco on John's behalf.
Pharmacy change for <<drug name>> prescribed by <<doctor name>> to our mail service pharmacy.
Action: If you have not already done so, please respond to the request received from Merck-Medco to convert John's retail prescriptions to our mail service pharmacy.
COPYRIGHT AND LEGAL INFORMATION
USE OF INFORMATION

FIG. 11

My Doctor Visit Print The Kit ?

> My Doctor Visit

What's Included
- Medication history
- Patient requests
- **Benefit information**
- Formulary quick guide
- Prescription fax form

Patient name: John- D.O.B. 07/29/1969

Benefit Information

This section reflects your plan's typical copay information for brand and generic medications.

For more detailed information about coverage and pricing for specific medications for the selected patient, click here to be taken to our prescription coverage and pricing area.

✉ plan coverage through mail service pharmacy
plan coverage at retail pharmacy

	Days' supply:
Home delivery ✉	You can obtain up to 90 days supply when using the mail service.
Retail	You can obtain up to 21 day supply when purchasing medication from a participating pharmacy.

	Copay for brand-name medications:
Home delivery ✉	When using the mail service, your copay for a brand name medication is $10.00 for most medications. Other specific drug classifications have a different copay.
Retail	When using your card at a participating pharmacy, your copay for a brand name medication is $10.00 for most medications. Other specific drug classifications have a different copay.

	Copay for generic medications:
Home delivery ✉	When using the mail service, your copay for a brand name medication is $0.00 for most medications. Other specific drug classifications have a different copay.
Retail	When using your card at a participating pharmacy, your copay for a generic medication is $6.00 for most medications. Other specific drug classifications have a different copay.

	Copay for brand-name medications when a generic is available:
Home delivery ✉	When using the mail service, your copay for a brand name medication when a generic is available is $10.00 for most medications. Other specific drug classifications have a different copay.
Retail	When using your card at a participating pharmacy, your copay for brand-name medication when a generic is available is $10.00 for most medications. Other specific drug classifications have a different copay.

COPYRIGHT AND LEGAL INFORMATION
USE OF INFORMATION

FIG. 12

My Doctor Visit | Print The Kit | ?

> My Doctor Visit

Patient name: John- D.O.B. 07/29/1969

What's Included
- Medication history
- Patient requests
- Benefit information
- **Formulary quick guide**
- Prescription fax form

Formulary quick guide

This convenient, easy-to-understand quick guide includes **most** of the commonly prescribed medications preferred by your health plan. This guide is a useful tool in helping you and your doctor to maximize your health plan benefits.

ANTI - INFECTIVES (Antibiotics/Antifungals)

Oral Antifungals

$	+ griseofulvin, ultramicrosize
$	+ nystatin
$$	Grifulvin V
$$	Mycelex
$$$$	Diflucan
$$$$	Fungizone
$$$$	⊕ ketoconazole (Nizoral)
$$$$	Lamisil
!!!!	Ancobon
!!!!	Sporanox

Oral Cephalosporins

$	+ cephalexin monohydrate
$	+ cephradine
$$	+ cefaclor
$$$	Ceftin
$$$	Lorabid
$$$	Omnicef
$$$	Suprax
$$$	Vantin

Oral Penicillins

$	+ amoxicillin trihydrate
$	+ ampicillin trihydrate
$	+ penicillin v potassium
$$	Amoxil
$$	Amoxil
$$$	Augmentin
$$$	+ dicloxacillin sodium

Oral Sulfas

$	+ erythromycin
$	Gantrisin
$	+ sulfamethoxazole /trimethoprim
$$	+ sulfisoxazole
!!!!	+ sulfadiazine

Vaginal Antifungals

$$	Diflucan
$$	+ nystatin
$$$	Terazol
$$$	Monistat 3

CARDIOVASCULAR (Blood Pressure/ Heart/Cholesterol)

ACE Inhibitors/Combinations

$	+ captopril
$	+ hctz/propranolol HCL
$	+ hydralazine HCL/HCTZ
$	+ reserpine/HCTZ
$$	PCE
$$	Zithromax
$$$	Biaxin
$$$	Biaxin XL

Antilipidemics

$$$	Cipro
$$$	Cipro
$$$	Noroxin
$$$$	Floxin

KEY

$	= Lowest Relative Cost
!!!!	= Highest Relative Cost
+	= Use Generic (Brand nonformulary)
⊕	= Use Generic (Brand nonformulary)

Relative Cost Index is a relative indication of the cost to the payer for medications. It does not reflect costs incurred by patients or dispensers. More dollar signs indicate a more costly agent to the plan.

FIG. 13

14/21

<<Patient Name>>'s 1402 Drug Information

As of: <<Date>> 1404 Member ID: 999999999 1405

Date of Birth: <<Date>> 1406 Group #: 999999999 1407

1403 (Form Content)

Merck-Medco would like to support your efforts to keep your patients healthy by providing patient specific prescription information such as medication histories. And though we know you can not always consider cost when prescribing using the information below as a guide can help make the drugs you want to prescribe more affordable for you patient.

Mail envelope icon 1408 prescription you filled through your mail-service pharmacy

Mail person icon prescription you filled at a retail (walk-in) pharmacy

Medication History:

This list is comprised of prescriptions filled at our home delivery pharmacy and at the patient's retail pharmacy.

Prescription (Rx) number; Medication name; strength	1410 Rx filled at	1411 Date filled	1412 Quantity	Days supply	Days past refill date
#123456789012 Cholestyramine 250mg		<<10/13/00>>	<<30>>	<<30>>	<<72>> 1414
1409		<<8/1/00>>	<<30>>	<<30>>	
<<Lotensin>>		<<09/10/00>>	<<180>>	<<90>>	<<0>>
				1413	

Patient Savings Opportunities:

Your patient can often save using our home delivery mail service pharmacy. For ongoing prescriptions, please consider:

- Writing a 14-day prescription to reset your patient's immediate needs through a retail pharmacy.
- Writing up to a 90-day prescription for our home delivery pharmacy.

Send the prescription to us today by taping x to our *Prescription Authorization Form* and faxing it to us.

Your patient can save using the generic equivalent:

Please consider prescribing the generic version of medications where appropriate so your patient may enjoy additional savings.

Patient Requests:

While communicating with Merck-Medco, your patient asked us to contact you to request:

- New prescriptions for <<drug name, drug name and drug name>> medications he/she are currently taking. 1415

✓ Action: If you have not already done so, please respond to the renewal requests received from Merck-Medco on your patient's behalf

1416

- Pharmacy drugs for <<drug name and drug name>> to our mail service pharmacy.

✓ Action: If you have not already done so, please respond to the requests received from Merck-Medco to convert your patient's retail prescriptions to our mail service pharmacy.

Benefit Information:* 1417

	Maximum days supply	Generic co-payment	Brand co-payment
Home delivery (mail service)	<<90>>	<<$10>>	<<$16>>
Retail (walk-in)	<<30>> 1418	<<$7>> 1419	<<$13>> 1420

*This information is meant to serve as a general guide. The co-payment for certain medications may vary.

FIG. 14

My Doctor Visit | Add'l Fax Form | Print The Kit | ?

> My Doctor Visit

Patient name: John- D.O.B. 07/29/1969

What's Included
- Medication history
- Patient requests
- Benefit information
- Formulary quick guide
- **Prescription fax form**

Prescription Fax Form

For you and your doctor's convenience, you may bring the prescription authorization form to your doctor visit to request new prescriptions. This form can be completed and faxed to our mail service pharmacy by your doctor.

Below is an example of the prescription authorization form. Do not attempt to print from this page. The prescription authorization form is part of the My Doctor Visit kit which can be printed by clicking the "Print The Kit" button above.

MMRx • Logo • FPO — Prescription Fax Form

Please fully complete steps 1 to 4 below to help ensure timely processing of your patient's prescription

Questions: Call Customer Service at (1-888-327-0791)

BAR CODE FPO

STEP 1 Fill in both the **Subscriber** and the **Patient** information below.

Prescription Drug Card Member #:
(Usually different than the health plan ID #) _____

Subscriber Information (card holder):

Name:(First) _____ (Last) _____

Address: _____

City _____ State _____ Zip Code _____ Phone _____

Patient Name:(First) _____ (Last) _____ DOB: _____

STEP 2:
Confirm your office's secure fax #. Check the box to indicate a change, and write in the correct #.

_____

☐ New fax #:

_____

STEP 3:
Complete for new patients or for patients with changes in health.
Please check all that apply:

Allergies:
☐ None ☐ Sulfa ☐ Penicillin
☐ Aspirin ☐ Codeine ☐ Iodine

Medical Conditions:
☐ Heart ☐ Asthma ☐ High B.P.
☐ Ulcer ☐ Glaucoma

Other _____

STEP 4 Please tape the prescription from your prescription pad here (Most patients can receive up to a 90-day supply and 4 refills.)

TAPE PRESCRIPTION HERE

Please confirm you have included:

On the form:

- Subscriber's Drug Card Number

On the prescription:

- Patient's Full Name
- Patient's Date of Birth
- Date Prescription Written
- Your Signature

FIG. 15

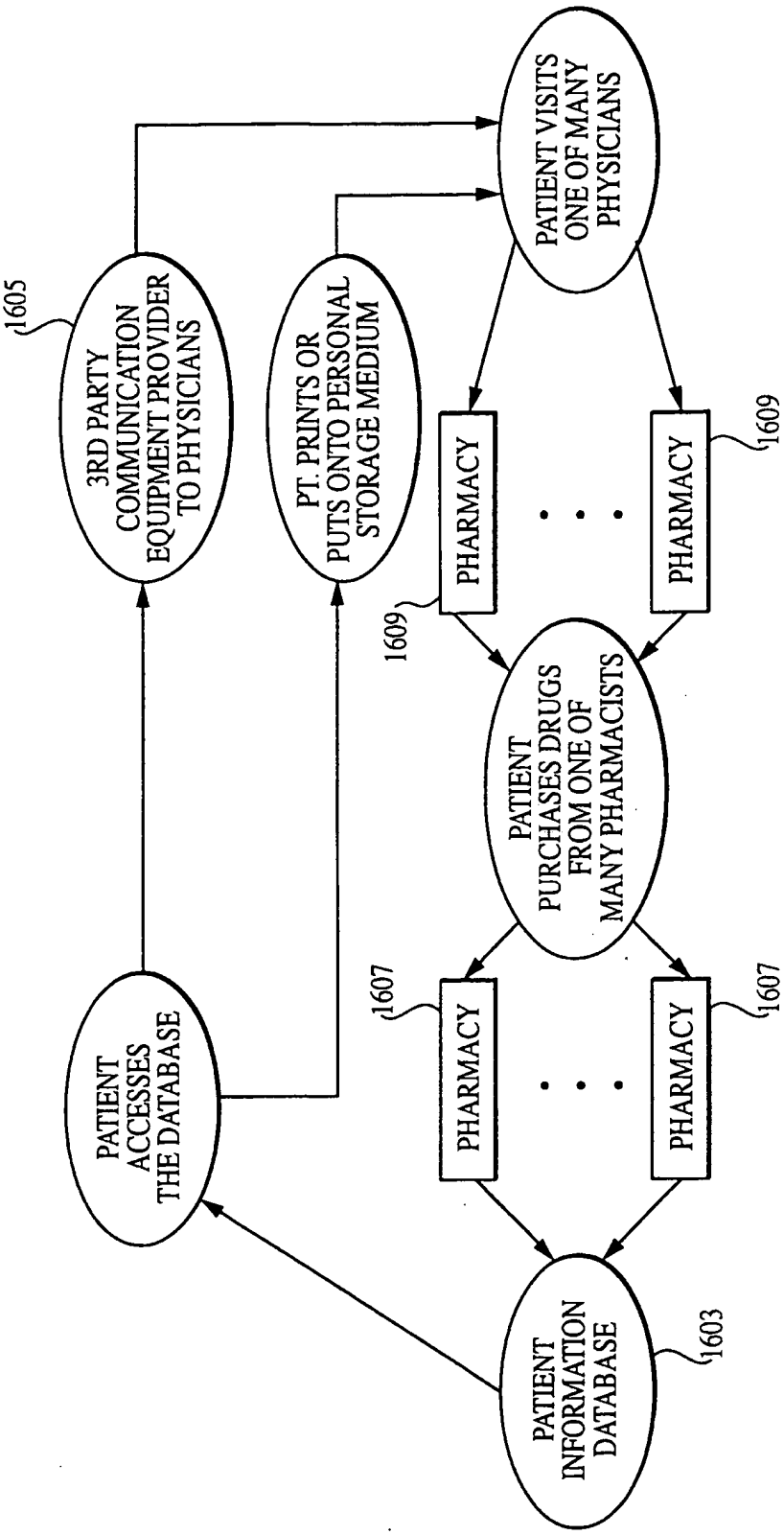

PATIENT VISITS ONE OF MANY PHYSICIANS
3RD PARTY COMMUNICATION EQUIPMENT PROVIDER TO PHYSICIANS
PT. PRINTS OR PUTS ONTO PERSONAL STORAGE MEDIUM
PHARMACY
PHARMACY
PATIENT PURCHASES DRUGS FROM ONE OF MANY PHARMACISTS
PHARMACY
PHARMACY
PATIENT ACCESSES THE DATABASE
PATIENT INFORMATION DATABASE
1605
1609
1609
1607
1607
1603

FIG. 16

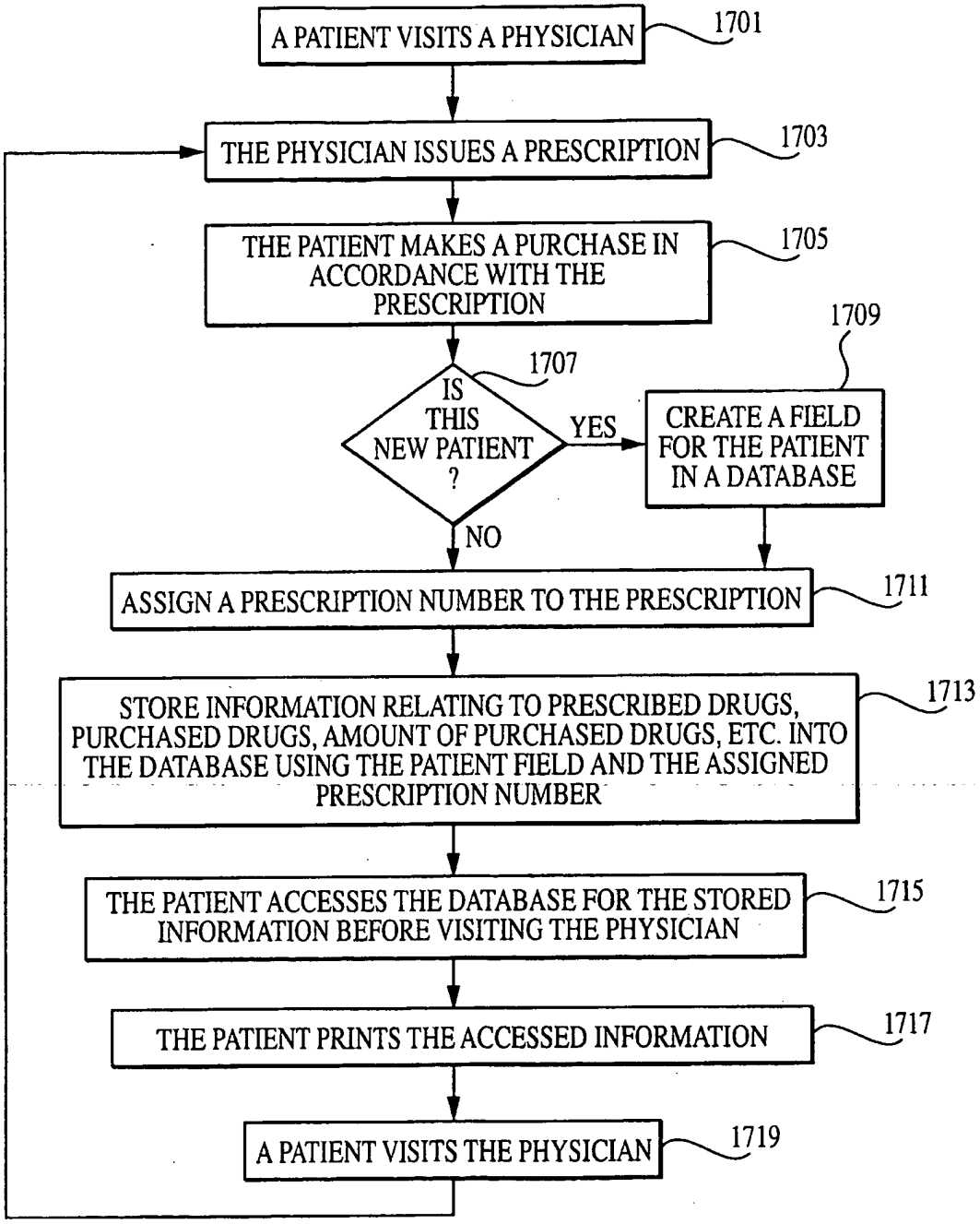

A PATIENT VISITS A PHYSICIAN
1701
THE PHYSICIAN ISSUES A PRESCRIPTION
1703
THE PATIENT MAKES A PURCHASE IN ACCORDANCE WITH THE PRESCRIPTION
1705
1709
1707
IS THIS NEW PATIENT ?
YES
CREATE A FIELD FOR THE PATIENT IN A DATABASE
NO
ASSIGN A PRESCRIPTION NUMBER TO THE PRESCRIPTION
1711
STORE INFORMATION RELATING TO PRESCRIBED DRUGS, PURCHASED DRUGS, AMOUNT OF PURCHASED DRUGS, ETC. INTO THE DATABASE USING THE PATIENT FIELD AND THE ASSIGNED PRESCRIPTION NUMBER
1713
THE PATIENT ACCESSES THE DATABASE FOR THE STORED INFORMATION BEFORE VISITING THE PHYSICIAN
1715
THE PATIENT PRINTS THE ACCESSED INFORMATION
1717
A PATIENT VISITS THE PHYSICIAN
1719

FIG. 17

ACCESSING THE DATABASE BY THE PATIENT

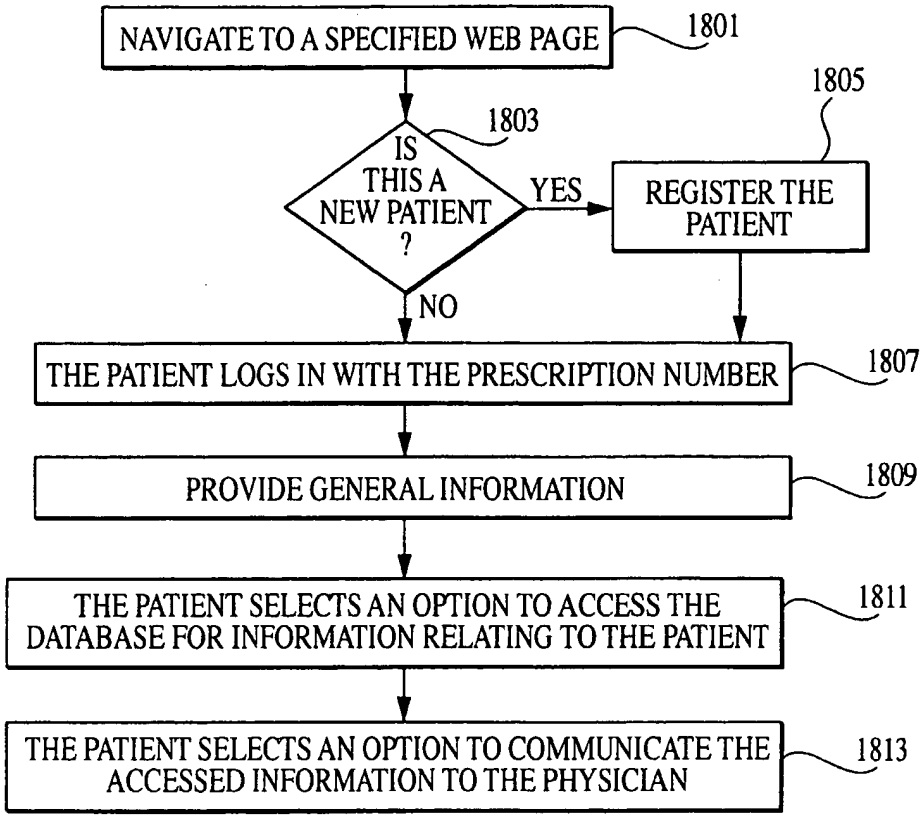
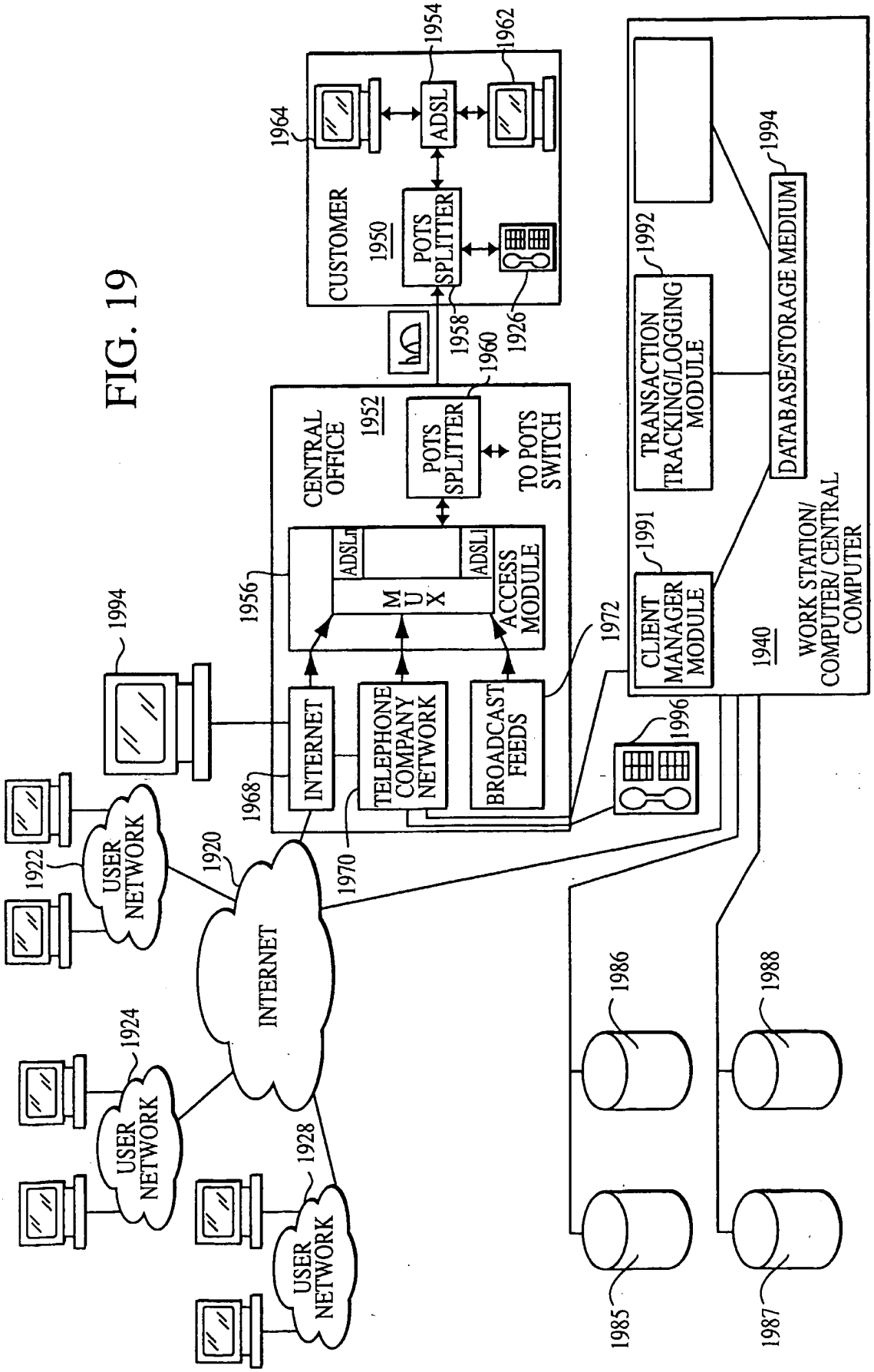


FIG. 18

FIG. 19


CUSTOMER
1950
POTS SPLITTER
ADSL
1954
1962
1964
1958
1960
1926
CENTRAL OFFICE
1952
POTS SPLITTER
TO POTS SWITCH
ADSL
ADSL
M U X
ACCESS MODULE
1956
INTERNET
TELEPHONE COMPANY NETWORK
BROADCAST FEEDS
1968
1970
1972
1994
1996
TRANSACTION TRACKING/LOGGING MODULE
1992
DATABASE/STORAGE MEDIUM
1994
CLIENT MANAGER MODULE
1991
WORK STATION/ COMPUTER/ CENTRAL COMPUTER
1940
INTERNET
1920
USER NETWORK
1922
USER NETWORK
1924
USER NETWORK
1928
1986
1988
1985
1987

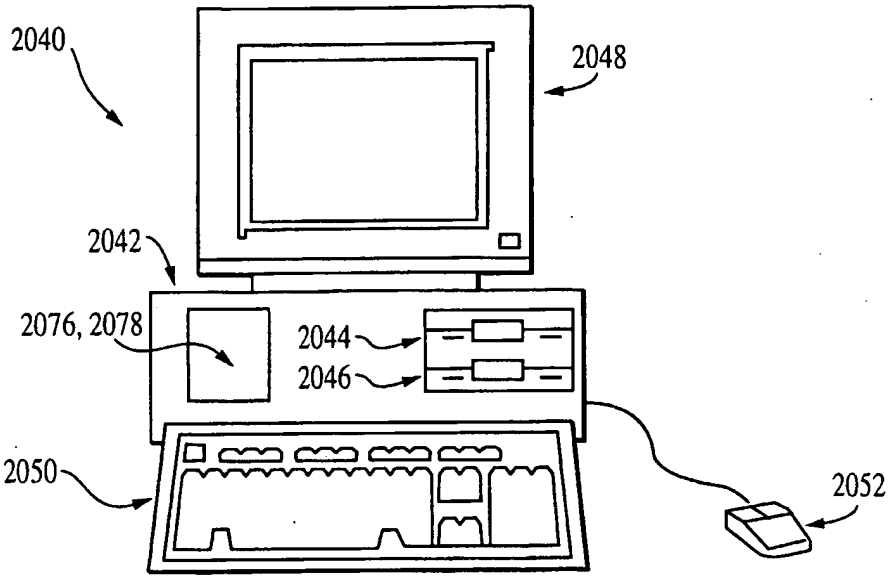

2040
2048
2042
2076, 2078
2044
2046
2050
2052

FIG. 20

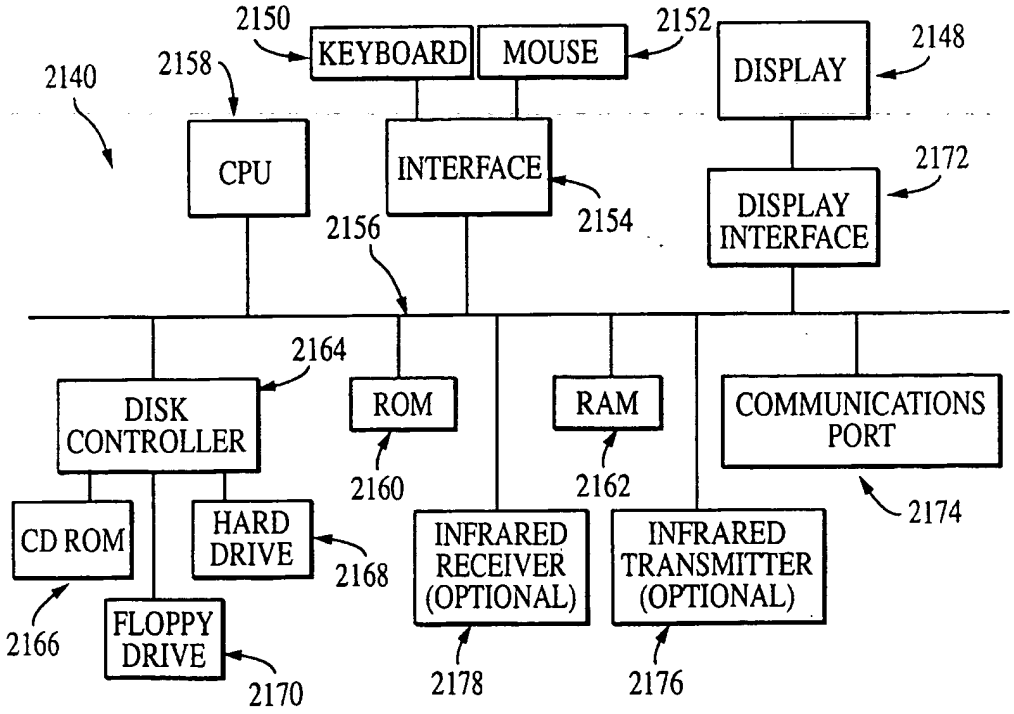

2150
KEYBOARD
MOUSE
2152
DISPLAY
2148
2140
2158
CPU
INTERFACE
2154
2172
DISPLAY INTERFACE
2156
2164
DISK CONTROLLER
ROM
RAM
COMMUNICATIONS PORT
2160
2162
2174
CD ROM
HARD DRIVE
2168
INFRARED RECEIVER (OPTIONAL)
INFRARED TRANSMITTER (OPTIONAL)
2166
FLOPPY DRIVE
2170
2178
2176

FIG. 21

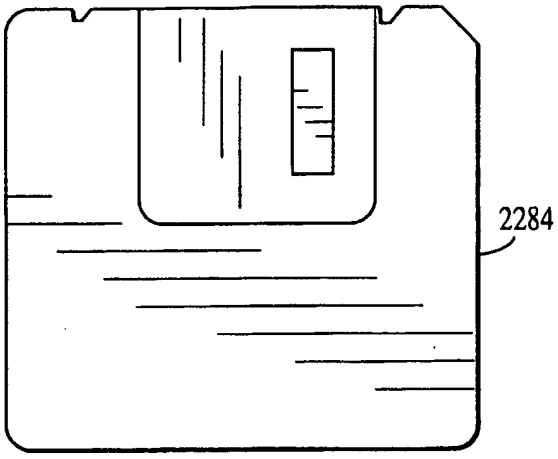


FIG. 22